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JOINT DEVELOPMENT OF COMMON OFFSHORE OIL AND GAS DEPOSITS: "MERE" STATE PRACTICE OR CUSTOMARY INTERNATIONAL LAW?

By David M. Ong[*]

I. INTRODUCTION

The entry into force of the 1982 United Nations Convention on the Law of the Sea[1] and its widespread ratification[2] have renewed interest in the remaining gaps and ambiguities in its provisions on the control of shared marine resources. The discussion has recently focused on the regulation of common or transboundary fishing stocks[3] and migratory species,[4] a problem that was considered serious enough to merit the adoption of another multilateral convention. The 1995 Agreement on the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks[5] was designed to resolve the increasing number of disputes on this issue.[6]

Of late, less attention has been paid to the other main type of shared marine resource, common[7] offshore hydrocarbon deposits. These deposits either lie across delimited continental shelf boundaries or are found in areas of overlapping continental shelf claims. This article reappraises the international legal regime governing such deposits and suggests that recent bilateral joint development agreements constitute additional cooperative state

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[1] United Nations Convention on the Law of the Sea, *opened for signature* Dec. 10, 1982, 1833 UNTS 397, *reprinted in* UNITED NATIONS, OFFICIAL TEXT OF THE UNITED NATIONS CONVENTION ON THE LAW OF THE SEA WITH ANNEXES AND INDEX, UN Sales No. E.83.V.5 (1983) (entered into force Nov. 16, 1994) [hereinafter LOS Convention].

[2] There are currently 132 states parties (visited Sept. 10, 1999) <http://www.un.org/Depts/los/index.htm>.

[3] Those located between the exclusive economic zones (EEZs) of adjacent or opposite coastal states, and beyond the coastal states' EEZs in the high seas.

[4] LOS Convention, *supra* note 1, Arts. 63, 64. *See* David Freestone & Zen Makuch, *The New International Environmental Law of Fisheries: The 1995 UN Straddling Stocks Convention*, 1996 Y.B. INT'L ENVTL. L. 3; Peter G. G. Davies & Catherine Redgwell, *The International Legal Regulation of Straddling Fish Stocks*, 1996 BRIT. Y.B. INT'L L. 199.

[5] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982, Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, *opened for signature* Dec. 4, 1995, 34 ILM 1542 (1995) (not yet in force). Entry into force requires 30 ratifications or accessions. Currently, there are 24 states parties, and 59 signatories (visited Aug. 6, 1999) <http://www.un.org/Depts/los/index.htm>.

[6] To mention but two: First, the dispute between various fishing states (Poland, Japan, South Korea and China) and Russia over the unilateral extension of Russian fisheries jurisdiction incorporating the so-called peanut hole area of high seas in the Sea of Okhotsk surrounded by the Russian 200-nautical-mile EEZ. *See* ALEX G. OUDE ELFERINK, THE SEA OF OKHOTSK PEANUT HOLE: DE FACTO EXTENSION OF COASTAL STATE CONTROL (POLOS Report No. 2/1997, Fridtjof Nansen Institute, 1998). Second, the *Fisheries Jurisdiction* case between Spain and Canada, in which the International Court of Justice declared that it did not have jurisdiction over the dispute regarding the Canadian Navy's seizure of a Spanish fishing vessel on the high seas pursuant to amended regulations extending Canada's fisheries enforcement jurisdiction beyond its EEZ, but within the regulatory area of the Northwest Atlantic Fisheries Organization. Canada had filed a reservation to its acceptance of the Court's optional jurisdiction on May 10, 1994. Fisheries Jurisdiction (Spain v. Can.) (Int'l Ct. Justice Dec. 4, 1998). *See* Christopher C. Joyner & Alejandro Alvarez von Gustedt, *The 1995 Turbot War: Lessons for the Law of the Sea*, 11 INT'L J. MARINE & COASTAL L. 425 (1996).

[7] A "common" resource is defined as any natural resource that is used (or is capable of being used) by at least two states.

practice on resolving disputes over these deposits, in line with general legal developments promoting cooperation with regard to shared natural resources.

This recent bilateral state practice gives rise to the question whether a rule of customary international law requiring cooperation is now applicable to a common hydrocarbon deposit. If there is such a rule, additional questions arise concerning its nature and extent; in particular, is the rule progressing toward the inclusion of a further, more specific requirement for the joint development[8] or transboundary unitization[9] of a common deposit? These questions and related issues are assessed in light of recent state practice. This discussion is followed by an appraisal of the doctrinal debate on the legal status of the cooperative requirement regarding joint development.

Before turning to the issue of cooperation, we examine the continental shelf regime and the problems posed by common hydrocarbon deposits.

II. SOVEREIGN RIGHTS OF COASTAL STATES AND COMMON PETROLEUM DEPOSITS

A common petroleum deposit raises difficult legal issues in two main situations. First, it may lie across a continental shelf boundary. The relevant maritime boundary delimitation agreement often includes a provision outlining the procedure to be followed if a common deposit of oil or gas is found to straddle the boundary.[10] Many continental shelf boundary

[8] The concept of "joint development" has not been understood or applied uniformly. The Conclusions and Recommendations of the lawyers' group at the Second Workshop on Geology and Hydrocarbon Potential in the South China Sea and Possibilities of Joint Development, held in Honolulu during August 1983, defined joint development as extending from unitization of shared resources to unilateral development of a shared resource beyond a stipulated boundary, and various gradations in between. *See* Masahiro Miyoshi, *The Basic Concept of Joint Development of Hydrocarbon Resources on the Continental Shelf*, 3 INT'L J. ESTUARINE L. 1, 5, & Appendix II, at 17 (1988) [hereinafter Miyoshi, *Basic Concept*].

Townsend-Gault defines joint development as "a decision by [two or more countries] to pool any rights they may have over a given area and, to a greater or lesser degree, undertake some form of joint management for the purposes of exploring for and exploiting offshore minerals." Ian Townsend-Gault, *Joint Development of Offshore Mineral Resources—Progress and Prospects for the Future*, 12 NAT. RESOURCES F. 275, 275 (1988).

Lagoni restricts the scope of joint development to cooperation between states based on an agreement regarding the exploration for and exploitation of certain deposits, fields or accumulations of nonliving resources that either extend across a boundary or lie in an area of overlapping claims. *See* International Law Association [ILA], International Committee on the EEZ, Report on Joint Development of Non-Living Resources in the Exclusive Economic Zone at 2 (Rainer Lagoni, rapporteur, 1988) [hereinafter 1988 ILA Report].

Miyoshi also takes a restrictive view of joint development that limits it to an intergovernmental agreement, to the exclusion of joint ventures between a government and an oil company or consortia of private companies for capital participation. He therefore defines joint development as "[a]n inter-governmental arrangement of a provisional nature, designed for functional purposes of joint exploration for and/or exploitation of hydrocarbon resources of the sea-bed beyond the territorial sea." MASAHIRO MIYOSHI, THE JOINT DEVELOPMENT OF OFFSHORE OIL AND GAS IN RELATION TO MARITIME BOUNDARY DELIMITATION 3 (International Boundaries Research Unit, Maritime Briefing No. 5, 1999) [hereinafter MIYOSHI, OIL AND GAS].

Finally, the research team of the British Institute of International and Comparative Law defines joint development as an agreement between two states to develop, so as to share jointly in agreed proportions by interstate cooperation and national measures, the offshore oil and gas in a designated zone of the seabed and subsoil of the continental shelf to which either or both of the participating states are entitled in international law. 1 HAZEL FOX ET AL., JOINT DEVELOPMENT OF OFFSHORE OIL AND GAS 45 (1989).

[9] The term "transboundary" or "international" unitization as used here describes an agreement between states applying unitization procedures to a deposit located in a cross-border or overlapping claims area. For the purposes of this article, the joint development concept includes such transboundary or international unitization agreements. Unitization agreements per se have been defined by Taverne as agreements between two or more persons or groups of persons holding exploitation rights in common petroleum reservoirs by which these reservoirs will be exploited in an integrated manner, as a single unit. BERNARD TAVERNE, AN INTRODUCTION TO THE REGULATION OF THE PETROLEUM INDUSTRY: LAW, CONTRACTS AND CONVENTIONS 149 (1994). Lagoni defines unitization as the use of a single operator to manage a common petroleum deposit shared by two or more concessionaires. Rainer Lagoni, *Oil and Gas Deposits Across National Frontiers*, 73 AJIL 215, 224 (1979) (citing John C. Jacobs, *Unit Operation of Oil and Gas Fields*, 57 YALE L.J. 1207, 1210 (1947–48); and James E. Horigan, *Unitization of Petroleum Reservoirs Extending Across Sub-Sea Boundary Lines of Bordering States in the North Sea*, 7 NAT. RESOURCES LAW. 67, 73 (1974)).

[10] Kwiatkowska notes that such transboundary resource deposit clauses are often modeled on the 1965 UK-Norway Agreement, *infra* note 12, and are found in a considerable number of maritime delimitation agreements. Barbara Kwiatkowska, *Economic and Environmental Considerations in Maritime Boundary Delimitations, in*

delimitation agreements around the world now anticipate transboundary or international unitization of such deposits.[11] Thus, the United Kingdom and Norway agreed in their 1965 treaty on the continental shelf boundary in the North Sea[12] that, if a single petroleum field was found to extend across the dividing line in such a way that the field was exploitable from either side of the dividing line, the two states would seek to reach agreement on how the field could be most effectively exploited and how to apportion the proceeds.[13] In line with this provision, the United Kingdom and Norway subsequently entered into an agreement to jointly develop the Frigg (Gas) Field Reservoir as a single unit and to apportion the proceeds from the exploitation between them.[14]

The second situation is more important in terms of the need to clarify the applicable rules of international law. In this case the deposit is located in a disputed continental shelf area subject to the overlapping claims of two or more neighboring coastal states. As the International Court of Justice (ICJ) observed, "Evidently any dispute about boundaries must involve that there is a disputed marginal or fringe area, to which both parties are laying claim ...."[15] Here, it is presumed that each claim is legally correct;[16] that is, that each of the states concerned is legally entitled to claim the relevant rights to the area in question.[17] In light of the entry into force and widespread acceptance of the 1982 LOS Convention, this assump-

INTERNATIONAL MARITIME BOUNDARIES 75, 87 n.49 (Jonathan I. Charney & Lewis M. Alexander eds., 1993) [hereinafter MARITIME BOUNDARIES]. For an earlier list of such provisions, see 1988 ILA Report, *supra* note 8, at 50–51 n.39. *See also* Hui Yu, *Joint Development of Mineral Resources—An Asian Solution?* 1992 ASIAN Y.B. INT'L L. 87, 102 nn.73, 74.

[11] Writing in 1979, Lagoni found that more than half of the 60 delimitation agreements concluded since 1942 contained such clauses. Lagoni, *supra* note 9, at 233. More recently, Kwiatkowska, *supra* note 10, identified 51 instances in agreements reported in 1 & 2 MARITIME BOUNDARIES, *supra* note 10. Colson notes that unitization provisions are not uncommon in continental shelf boundary agreements. He counts 36 of these provisions, as well as several other, more specific cooperative requirements in the maritime boundary agreements collected in *id.* David Colson, *The Legal Regime of Maritime Boundary Agreements, in id.* at 41, 55–56 nn. 70–77.

[12] Agreement Relating to the Delimitation of the Continental Shelf between the Two Countries, Mar. 10, 1965, UK-Nor., 1965 Gr. Brit. TS No. 71 (Cmnd. 2757), 551 UNTS 214. *See* D. H. Anderson, *Norway–United Kingdom*, Report No. 9-15, *in* MARITIME BOUNDARIES, *supra* note 10, at 1879.

[13] Another example from the North Sea region, with almost identical wording, is the Agreement Relating to the Exploitation of Single Geological Structures Extending across the Dividing Line on the Continental Shelf under the North Sea, Oct. 6, 1965, UK-Neth., Art. 1, 1967 Gr. Brit. TS No. 24 (Cmnd. 3254). According to Taverne:

> The wording of the article suggests that the fact that a reservoir crosses the dividing line is of itself not sufficient to trigger the obligation to co-operate in developing such a reservoir. The requirement is for it to be technically possible to exploit the one part of the reservoir from the other side of the dividing line. But it is not required that the straddling reservoir should be exploited as an unit .... The only firm condition imposed is apparently the condition that the proceeds of exploitation should be shared.

TAVERNE, *supra* note 9, at 155.

[14] Agreement Relating to the Exploitation of the Frigg Field Reservoir and the Transmission of Gas Therefrom to the United Kingdom, May 10, 1976, UK-Nor., 1977 Gr. Brit. TS No. 113 (Cmnd. 7043), 1098 UNTS 3. *See* J. C. Woodliffe, *International Unitization of an Offshore Gas Field*, 26 INT'L & COMP. L.Q. 338 (1977). Similar agreements relating to the Murchison and Statfjord Fields were also concluded by the United Kingdom and Norway on October 16, 1979, 1981 Gr. Brit. TS No. 39 (Cmnd. 8270) & No. 44 (Cmnd. 8282). The 1965 Anglo-Dutch Agreement, *supra* note 13, recently yielded a similar unitization agreement. Agreement Relating to the Exploitation of the Markham Field Reservoirs and the Offtake of Petroleum Therefrom, May 26, 1992, UK-Neth., 1993 Gr. Brit. TS No. 38 (Cmnd. 2254).

[15] North Sea Continental Shelf (FRG/Den.; FRG/Neth.), 1969 ICJ REP. 3, 22, para. 20 (Feb. 20) [hereinafter North Sea Cases].

[16] In the negotiations on the 1982 Convention, an Irish proposal attempted to formalize this presumption of the legitimacy of any continental shelf claim by prohibiting other states from carrying on exploration and exploitation activities in any areas that are claimed bona fide by any other state, except with that state's express consent. Ireland: Draft article on delimitation of areas of continental shelf between neighbouring States, 3 THIRD UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA, OFFICIAL RECORDS 220, UN Sales No. E.75.V.5 (1974). However, Lagoni notes that the requirement of a bona fide claim could only be relevant if on its face a claim were not justified by existing international law. Rainer Lagoni, *Interim Measures pending Maritime Delimitation Agreements*, 78 AJIL 345, 357 (1984).

[17] *See* Ian Townsend-Gault & William G. Stormont, *Offshore Petroleum Joint Development Arrangements: Functional Instrument? Compromise? Obligation? in* THE PEACEFUL MANAGEMENT OF TRANSBOUNDARY RESOURCES 51, 51 (Gerald H. Blake et al. eds., 1995) [hereinafter PEACEFUL MANAGEMENT].

tion is legally correct in any case where coastal states are less than 400 nautical miles apart.[18] In fact, the likely presence of hydrocarbon deposits generally prompts states to make such overlapping claims. For example, the claims of Thailand and Malaysia to a disputed area of continental shelf in the Gulf of Thailand initiated the negotiation process that led to the adoption of their 1979 and 1990 joint development agreements.[19] Another example from the East Asian region involved the conflicting continental shelf claims in the Yellow and East China Seas of Japan and South Korea, which were set aside by their 1974 Agreement.[20]

In this context, what exactly are the rights of adjacent or opposite states over a hydrocarbon deposit situated in a continental shelf area subject to overlapping claims? Almost from the inception of the continental shelf regime,[21] the coastal state's sovereign rights to explore the seabed and exploit its natural resources were said to be both inherent and exclusive.[22] The exclusive nature of these rights prevents their being lost to another state in the absence of express agreement to the contrary.[23] If the coastal state itself has not explored or exploited the continental shelf appertaining to it, no other state may do so without its express consent.[24] The exclusive nature of these rights is explicitly reaffirmed by Article 81 of the LOS Convention, which grants the coastal state the exclusive right to authorize and regulate drilling on the continental shelf for *all* purposes. Thus, "[i]f a state remains inactive after another state has requested that it cooperate in determining the perimeter and contents of the deposit, it does not necessarily forgo its sovereignty or sovereign rights to the minerals in place in its territory or continental shelf."[25]

[18] The combined effect of Articles 57, 76(1) and 77 of the LOS Convention, *supra* note 1, provides all coastal state parties and arguably even non–state parties under customary international law with a legal claim to a continental shelf of at least 200 nautical miles from their coastal baselines, over which they exercise sovereign rights for the purpose of exploring it and exploiting its natural resources. This is because Articles 76(1) and 77 apparently accord these sovereign rights to all coastal states, not merely parties to the Convention. Wolfrum notes that references to "States Parties," "States" and even "all States" as having rights or obligations under the Convention seem to indicate that it creates or codifies rights and obligations for both state parties and nonparties—notwithstanding the generally accepted principle that a state is bound only by treaty law to which it has consented. Rüdiger Wolfrum, *The Legal Order for the Seas and Oceans, in* ENTRY INTO FORCE OF THE LAW OF THE SEA CONVENTION: 1994 RHODES PAPERS 161, 166–67 (Myron H. Nordquist & John Norton Moore eds., 1995). *See also* Nikos St. Skourtos, *Legal Effects for Parties and Non-Parties: The Impact of the Law of the Sea Convention, in id.* at 187.

[19] Memorandum of Understanding on the Establishment of a Joint Authority for the Exploitation of the Resources in the Sea-bed in a Defined Area of the Continental Shelf of the Two Countries in the Gulf of Thailand, Feb. 21, 1979, Malaysia-Thail., 6 ENERGY 1355 (1981); and Agreement on the Constitution and Other Matters Relating to the Establishment of the Malaysia-Thailand Joint Authority, May 30, 1990, Malaysia-Thail. *See* David Ong, *Thailand/Malaysia: The Joint Development Agreement 1990*, 6 INT'L J. ESTUARINE & COASTAL L. 57 (1991). For both texts, see *id.*, Appendix 1, at 61, and Appendix 2, at 64. For background and the latest developments, see David M. Ong, *The 1979 and 1990 Malaysia-Thailand Joint Development Agreements: A Model for International Legal Cooperation in Common Offshore Petroleum Deposits?* 14 INT'L J. MARINE & COASTAL L. 207 (1999).

[20] Agreement concerning Joint Development of the Southern Part of the Continental Shelf Adjacent to the Two Countries, Feb. 5, 1974, Japan–S. Korea, *in* 4 NEW DIRECTIONS IN THE LAW OF THE SEA 117 (R. R. Churchill & Myron H. Nordquist eds., 1975) [hereinafter NEW DIRECTIONS]. This situation was complicated by the conflicting claims of Taiwan, and later the People's Republic of China, to the same continental shelf area.

[21] Coastal state rights to exploit the adjacent continental shelf have their roots in the Truman Proclamation of 1945, which asserted that the natural resources of the seabed and subsoil of the continental shelf contiguous to the coasts of the United States belonged to the United States and were subject to its jurisdiction and control. Proclamation No. 2667, Policy of the United States with Respect to the Natural Resources of the Subsoil and Sea Bed of the Continental Shelf, Sept. 28, 1945, 10 Fed. Reg. 12,303 (1945).

[22] *See* LOS Convention, *supra* note 1, Art. 77(2); and Convention on the Continental Shelf, Apr. 29, 1958, Art. 2(2), 15 UST 471, 499 UNTS 311. *See* Report of the International Law Commission to the General Assembly, [1956] 2 Y.B. Int'l L. Comm'n 253, 264, Art. 68, UN Doc. A/CN.4/SER.A/1956/Add.1. *See also* SHIGERU ODA, INTERNATIONAL CONTROL OF SEA RESOURCES 162 (reprint 1989) (1963).

[23] *See* IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 215 (5th ed. 1998).

[24] *See* ODA, *supra* note 22, at 163. Article 2(2) of the 1958 Geneva Convention, *supra* note 22, established this concept for the first time as a positive rule of international law. It is now included almost verbatim in Article 77(2) of the LOS Convention, *supra* note 1.

[25] Lagoni, *supra* note 9, at 238.

Moreover, these rights inhere in the coastal state under both conventional[26] and customary international law.[27] Consequently, these sovereign rights do not depend on occupation, either express or notional, or on any express proclamation by the coastal state.[28] Thus, international law assumes that sovereign rights to exploit natural resources on the seabed and subsoil extending to *at least* 200 nautical miles from the baseline, and possibly to the edge of the continental margin, are allocated among the coastal states of the world[29] and cannot be lost through neglect.[30]

This notion of a coastal state's inherent sovereign rights gives rise to a further, and important, distinction between the apportionment of a state's continental shelf area and the delimitation of that area between the coastal state and other adjacent or opposite coastal states. D. P. O'Connell described the distinction between these two concepts as follows: "By apportionment is meant the ascertainment of the areas of seabed respectively appertaining to neighbouring States which are linked by a common continental shelf. By delimitation is meant the determination or fixing in precise detail of the actual boundary between those States."[31] Apportionment and delimitation are therefore discrete exercises, delimitation being a subordinate process that operates according to its own rules but cannot constitute, or derogate from, the general entitlement under international law of each state to its portion of the continental shelf.[32] The ICJ provided the definitive statement on this intrinsic distinction when it noted that the basic concept of continental shelf entitlement means that delimitation essentially consists in drawing a boundary line between areas that *already* appertain to one or another of the affected states.[33] The inherent nature of the coastal state's sovereign rights over the continental shelf means that all interested states have sovereign rights to exploit and receive the proceeds from the common deposit.

Thus, any legal distinction between these rights where the deposit straddles a continental shelf boundary and where the deposit is located within an area of overlapping claims is less significant than initially surmised. Whereas Onorato, in his seminal article on the subject, defined a common petroleum deposit as a single structure or field that in part underlies the territory of two or more states,[34] we can now add that the deposit may also be situated in a continental shelf area subject to overlapping claims. In both cases, the essential problem remains the same: "to ascertain the content of the law defining the rights of those States interested in the common reserve."[35] Thus, the applicable international law in both situations also remains essentially the same.

[26] As successively provided for in Article 2 of the 1958 Geneva Convention on the Continental Shelf, *supra* note 22, and Article 77 of the LOS Convention, *supra* note 1.

[27] *See, e.g.*, North Sea Cases, 1969 ICJ REP. at 22, para. 19 (holding that the sovereign rights of a coastal state exist ipso facto and ab initio by virtue of its sovereignty over the adjacent land territory). This case was decided by the application of customary international law, as Germany was not a party to the relevant international agreement, the Convention on the Continental Shelf. *Id.* at 28, para. 37.

[28] Article 2(3) of the 1958 Convention, *supra* note 22, now provided word for word in Article 77(3) of the LOS Convention, *supra* note 1. This rule has special force in respect of the so-called inner continental shelf, up to 200 nautical miles from the baseline, which coincides with the 200-nautical-mile EEZ limit (*id.*, Art. 57).

[29] Townsend-Gault & Stormont, *supra* note 17, at 56.

[30] Contrary to what was envisaged in William T. Onorato, *Apportionment of an International Common Petroleum Deposit*, 26 INT'L & COMP. L.Q. 324, 329 (1977).

[31] 2 D. P. O'CONNELL, THE INTERNATIONAL LAW OF THE SEA 691 (1984). *See also* Townsend-Gault & Stormont, *supra* note 17, at 56.

[32] *See* O'CONNELL, *supra* note 31, at 692.

[33] North Sea Cases, 1969 ICJ REP. at 22, para. 20, *cited in id.* at 693. Later in the same Judgment, the Court held that the appurtenance of a given continental shelf area to one state or another in no way governs the precise delimitation of its maritime boundaries, any more than uncertainty over land boundaries can affect territorial rights. *Id.* at 32, para. 46.

[34] William T. Onorato, *Apportionment of an International Common Petroleum Deposit*, 17 INT'L & COMP. L.Q. 85 (1968).

[35] *Id.* at 85.

However, the exclusive nature of the sovereign rights of the coastal state over its continental shelf serves to exacerbate the problems associated with delimiting and managing any deposits on the shelf,[36] especially when overlapping claims have been made. Since all such claims are ostensibly valid by virtue of the coastal state's inherent sovereign rights and the contiguity of the areas claimed,[37] the delimitation of an area where an oil deposit may be present, never an easy task to begin with, becomes immeasurably more difficult. Nor do the vagueness and generality of the law on maritime boundary delimitation facilitate the search for an agreed solution in such cases.[38]

Moreover, contested claims to sovereign rights over maritime territory, as with sovereignty claims over land territory, have a way of becoming imbued with nationalistic overtones and understandably acquire an air of permanency within the national context. These attitudes present obstacles to reaching agreements on the joint development of deposits in overlapping areas, where all interested states arguably have undivided interests in the resources. As Schrijver notes, "It is difficult to reconcile the principle of permanent sovereignty with the duty to co-operate for equitable sharing, let alone joint management of transboundary resources."[39] Thus, states face a choice between settling the boundary, which may require protracted negotiations during which time the resources of the disputed area are not exploited, and cooperating in jointly developing the resources of all or part of the area while setting aside the contentious boundary issue.[40]

The difficulties arising from the exclusive nature of these sovereign rights are further compounded by the fact that the coastal state is not explicitly obligated to conserve and manage the resources concerned, at least under the continental shelf regime.[41] By contrast, the sovereign rights accorded to coastal states under the regime of the exclusive economic zone[42] entail corresponding duties of conservation and management of both living and nonliving resources in the superjacent waters, seabed and subsoil of the 200-nautical-mile zone.[43] Article 62 promotes the objective of optimum utilization of the living resources. However, Article 56(3) provides that the sovereign rights with respect to the seabed and subsoil shall be exercised in accordance with the continental shelf regime in Part VI of the 1982 Convention. Hence, a possible legal basis for cooperation by coastal states in the

[36] *See, e.g.*, PROSPER WEIL, THE LAW OF MARITIME DELIMITATION—REFLECTIONS 9–14 (1989).

[37] Under Article 76(1) of the LOS Convention, the continental shelf of a coastal state extends to the outer edge of the continental margin, subject to the limits prescribed in Article 76(5) and (6), or to a distance of 200 nautical miles where the outer edge of the continental margin does not extend that far. The notion of natural prolongation has therefore been disregarded where the distance claimed is not more than 200 nautical miles. As Reid notes, "[W]here the continental shelf does not extend beyond 200 nautical miles the coastal state is [nevertheless] entitled to exercise jurisdiction over the seabed regardless of its nature, out to 200 nautical miles." Peter C. Reid, *Petroleum Development in Areas of International Seabed Boundary Disputes: Means for Resolution*, 8 OIL & GAS L. & TAX'N REV. 214, 215 (1984–85).

[38] R. R. Churchill, *Joint Development Zones: International Legal Issues*, *in* 2 FOX ET AL., *supra* note 8, at 55, 56 (1990).

[39] NICO SCHRIJVER, SOVEREIGNTY OVER NATURAL RESOURCES: BALANCING RIGHTS AND DUTIES 338 (1997).

[40] 1 FOX ET AL., *supra* note 8, at 39.

[41] Part VI of the LOS Convention, *supra* note 1 (Arts. 76–85), especially Art. 77. Certain writers contend, however, that the duty to conserve, or at least efficiently manage, the mineral resources of the continental shelf was an implicit element in the evolution of the continental shelf regime under general international law, even if not explicitly provided for in subsequent multilateral conventions on the law of the sea. For example, Townsend-Gault argues that resource conservation (albeit on a unilateral basis) lay at the heart of the continental shelf doctrine under international law: "Jurisdiction was extended . . . for the purposes of [petroleum] exploitation in a controlled and properly managed manner." Ian Townsend-Gault, *Regional Maritime Cooperation Post-UNCLOS/UNCED: Do Boundaries Matter Any More?* *in* INTERNATIONAL BOUNDARIES AND ENVIRONMENTAL SECURITY: FRAMEWORKS FOR REGIONAL COOPERATION 3, 6 (Gerald Blake et al. eds., 1997). The lack of explicit conservation and management requirements is most obvious in relation to sedentary species, sovereign rights to which are explicitly provided for under the continental shelf regime by Article 77(4) and just as explicitly excluded from the EEZ regime by Article 68 of the LOS Convention.

[42] Part V of the LOS Convention, *supra* note 1 (Arts. 55–75).

[43] *Id.*, Art. 56(1)(a). See also Article 61, which reiterates the obligation to conserve and manage the living resources of the EEZ.

conservation and management of the nonliving resources of an overlapping area of continental shelf is unavailable. As we shall see below, the lack of explicit provision for cooperation regarding nonliving resources is also evident in the legal regime governing semienclosed seas.[44]

An appreciation of the difficulties raised by such claims has been held to justify the adoption of a functional approach toward the maritime boundary delimitation. Thus, Johnston argues that cooperation with respect to what are essentially ocean development and management issues such as shared marine resources may be better served by a regime designed specifically to exploit those resources efficiently than by the application of an existing set of rules on maritime boundary delimitation designed to divide space rather than the resources themselves.[45] Such an approach may be appropriate in a policy-oriented framework of legal analysis. Any attempt, however, to derive a legal requirement to cooperate in the form of a joint development agreement from the currently applicable sources of international law remains problematic.

Indeed, a strict interpretation of the principle of permanent sovereignty over natural resources leads to the presumption that an international rule of capture[46] should prevail over the principle of cooperation. This initial presumption can be rebutted on several fronts. First, there is a conceptual distinction between "sovereignty" and "sovereign rights"; the former is "redolent of territorial sovereignty"[47] and therefore operates in all three dimensions of land, sea and atmosphere. As a result, the term "sovereignty" was deliberately avoided both in 1958 at the first UN Conference on the Law of the Sea and again at the third.[48] Legally, "sovereign rights" extend only to the resources of the seabed and subsoil under the continental shelf regime and the superjacent waters up to 200 nautical miles in the EEZ—notwithstanding concerted attempts by developing countries to extend the concept of permanent sovereignty over the marine resources within their national jurisdictions in the period immediately prior to the Third UN Conference on the Law of the Sea.[49]

No explicit provision under international law calls for the rule of capture to prevail over that of cooperation in the context of a common deposit. While there is doctrinal support for this proposition,[50] no examples were found in international case law where it was held to be the legally correct and applicable rule. Moreover, equally authoritative opinion asserts

[44] *See id.*, Art. 123.

[45] DOUGLAS M. JOHNSTON, THE THEORY AND HISTORY OF OCEAN BOUNDARY-MAKING 227–29 (1988) (citing ORAN R. YOUNG, RESOURCE REGIMES: NATURAL RESOURCES AND SOCIAL INSTITUTIONS *passim* (1982)).

[46] The rule of capture has been defined in terrestrial terms as follows: the right to drill for and produce oil and gas from a particular tract of land even though doing so will drain the hydrocarbon concerned from beneath the land of another party. *See* Joseph W. Morris, *The North Sea Continental Shelf: Oil and Gas Legal Problems*, 2 INT'L LAW. 191, 206 (1967). This rule is derived from the early municipal case law of several oil-producing jurisdictions, notably in the United States. According to Onorato, *supra* note 34, at 90, "Under this rule, title to petroleum was determined solely by ownership gained . . . by way of unregulated and often wasteful extraction."

[47] BROWNLIE, *supra* note 23, at 215.

[48] The LOS Convention transforms sovereignty by disaggregating the concept into bundles of rights ranging from "sovereign rights" (Arts. 77(1), 56(1)(a)) to "exclusive right" (Arts. 60, 81), "jurisdiction and control" (Art. 94) and "jurisdiction" (Art. 79(4)), which may be shared with other states in the same spatial dimension, such as the continental shelf and the EEZ. *See* ELISABETH MANN BORGESE, OCEAN GOVERNANCE AND THE UNITED NATIONS 17–18 (Dalhousie University Centre for Foreign Policy Studies, 1995).

[49] One successful attempt was the adoption of General Assembly Resolution 3016 (XXVII), Permanent Sovereignty over Natural Resources of Developing Countries, UN GAOR, 27th Sess., Supp. No. 30, at 48, UN Doc. A/8730 (1972), which passed by 102-0, with 22 abstentions (including developed and developing countries) on December 18, 1972. *See* SCHRIJVER, *supra* note 39, at 90–92.

[50] Morris, *supra* note 46, at 210, affirms the applicability of an inferred rule of capture under international law but notes that within the North Sea context, UK and Norwegian domestic regulations had replaced this rule with that requiring the unit(ization) or cooperative development of adjoining license tracts. Bundy notes that, in the absence of an agreement to the contrary, the exploitation of common hydrocarbon reserves is still based largely on the rule of capture; a state or corporate licensee is free to maximize production from its side of the boundary line, notwithstanding the policies of the neighboring states sharing the same field. Rodman R. Bundy, *Natural Resource Development (Oil and Gas) and Boundary Disputes*, *in* PEACEFUL MANAGEMENT, *supra* note 17, at 23, 24.

the nonapplicability of an international rule of capture.[51] The increase in bilateral state practice in the form of joint development or transboundary unitization agreements also implies that the parties concerned were unwilling to enforce an international right of capture concerning their disputed common deposits, preferring instead to take a cooperative route. While such practice is insufficient in itself to confirm joint development as the only legal option available to interested states, it undermines the case for a presumed rule of capture in such situations. On the other hand, it might be argued that these bilateral agreements were only entered into because states were aware of the potential applicability of an international rule of capture and wanted to avoid a wasteful race to extract their respective portions of the deposits. Notwithstanding these arguments, when we consider the fluid nature of such hydrocarbon deposits, particularly in view of the principle of the preservation of the unity of the deposit, joint development emerges as the most advisable option.

III. Preservation of the Unity of a Common Petroleum Deposit

The initial articulation of this principle is attributed to Gidel, who proposed respect for the preservation of the "unity of the deposit" as a means of resolving the problem of common petroleum deposits that straddle the boundary between states.[52] Lagoni describes the problem as follows:

> 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.[53]

Joint development and transboundary unitization are designed to preserve the unity of such a deposit in these circumstances, while respecting the inherent, sovereign rights of the interested states.

That such a deposit would not be allowed to fall under only one state's jurisdiction is supported by state practice in bilateral treaties delimiting offshore boundaries that implicitly contemplate that offshore petroleum fields might be joint property,[54] as well as the increasing number of joint development agreements.[55] The few examples of the first type of joint development agreement discussed below (p. 787), by which one state manages the common deposit on behalf of another, also appear to confirm this point.

Another argument for the unitization of a common deposit invokes the efficiency principle: it seeks to maximize the exploitation potential of the deposit by taking its physical

[51] Miyoshi notes that a group of lawyers specializing in the international law of the sea and energy at the Third Workshop on Joint Exploration and Development of Offshore Hydrocarbon Resources in Southeast Asia, held in Bangkok from February 25 to March 1, 1985 [hereinafter Third Workshop], broadly agreed that no international rule of capture exists, citing a handwritten memorandum entitled "Summary Thoughts" by Jon Van Dyke, chairman of the final session. Miyoshi, *Basic Concept, supra* note 8, at 6, and Appendix 3, at 18.

[52] In Memorandum on the Regime of the High Seas, prepared by the UN Secretariat for the International Law Commission, [1950] 2 Y.B. Int'l L. Comm'n 67, 112, para. 337, UN Doc. A/CN.4/SER.A/1950/Add.1, *cited in* M. W. Mouton, *The Continental Shelf*, 85 Recueil des Cours 347, 421 (1954 I).

[53] Lagoni, *supra* note 9, at 217 (quoting Northcutt Ely, *The Conservation of Oil*, 51 Harv. L. Rev. 1209, 1219 (1937–38)). Commenting on the same problem, Townsend-Gault notes that unilateral exploitation may cause "long-term difficulties for all, for example, by leaving a sizeable residue in the reservoir, recovery of which is not economically viable." Ian [Townsend-]Gault, *The Frigg Gas Field*, 3 Marine Pol'y, 302, 303 (1979). Preservation of the unity of a deposit assumes even greater significance in light of the obligation of mutual restraint, *infra* part V.

[54] For example, the Anglo-Norwegian and Anglo-Dutch continental shelf delimitation treaties of the mid-1960s, *supra* notes 12, 13. *See also* Kwiatkowska, *supra* note 10, at 87 n.49; Colson, *supra* note 11, at 55–56 nn.70–77; 1988 ILA Report, *supra* note 8, at 50–51.

[55] *See* Onorato, *supra* note 30, at 325; Lagoni, *supra* note 9, at 216–18.

properties into account. It suggests that a better understanding of the underlying scientific precepts involved in exploiting a common petroleum deposit may provide more practical legal reasons for applying the unitization principle.[56] This argument has found support among writers familiar with the history of oil and gas law, particularly in the United States, where unitization was developed by petroleum engineers as a conservation tool.[57]

The fluid contents of the deposits, as well as their limited numbers and static character, led the U.S. municipal courts to replace the hitherto-applicable rule of unrestricted capture with a doctrine of correlative rights and duties.[58] This doctrine was based on the realization that owners of a common source of supply necessarily stand in a special relationship to one another to the extent that unrestricted production by one inevitably has adverse effects on the economic welfare of the others.[59] The recognition that each interest holder has an inherent right to an equitable share of the common deposit substituted a comprehensive regime of controlled cooperative production for the rule of (unrestricted) capture.[60] Such a regime requires joint or coordinated unitized development by all interested parties. Similarly, by 1968 the municipal laws of most oil-producing nations had moved from nonregulation and limited recognition of correlative rights to the requirement of cooperative development of a shared petroleum resource pool by all interest holders.[61] These domestic laws provide yet another example of a trend toward the application of a rule requiring some form of international cooperation.

Whether a customary international rule requiring cooperative development based on the principle of unitization has consequently developed at the international level is still subject to debate. Noting that unitization is the most common cooperative form of petroleum exploitation,[62] Robson nevertheless claims that an interested state "has no inherent right to insist on transboundary unitization."[63] For his part, Lagoni finds that there is a customary duty to seek agreement in good faith on common deposits in areas with established boundaries, but that the rules for areas of overlapping claims are uncertain.[64]

This distinction between already delimited and overlapping claims areas appears to stem from the assumption that, since the legal status of the latter is uncertain because of their lack of delimitation, the rights of the interested states in these areas are also subject to some uncertainty. This assumption is misplaced by virtue of the point made above that states' inherent sovereign rights obtain in areas of legitimate but overlapping claims, under both customary international law and the relevant multilateral conventions on the law of the sea.[65] Thus, any agreement between the claimant states will need to take into account the practical and arguably legal requirement to preserve the unity of any common deposits found in the area. A maritime boundary agreement could include a transboundary unitization clause covering the possible discovery of a straddling deposit, or an agreement could provide for joint development, in lieu of delimitation, either temporarily or permanently.

[56] As Swarbrick notes, "Apportionment of reserves is based on technical considerations which can be highly uncertain, especially in the early stages of the development of an oil or gas field." He therefore urges that this uncertainty be taken into account in early decisions on apportionment. Richard E. Swarbrick, *Oil and Gas Reservoirs Across Ownership Boundaries: The Technical Basis for Apportioning Reserves, in* PEACEFUL MANAGEMENT, *supra* note 17, at 41, 49–50.

[57] *See* Townsend-Gault, *supra* note 41, at 6.

[58] *See* Onorato, *supra* note 34, at 89–90.

[59] *Id.* at 91.

[60] *Id.* at 92.

[61] *Id.*

[62] Charles Robson, *Transboundary Petroleum Reservoirs: Legal Issues and Solutions, in* PEACEFUL MANAGEMENT, *supra* note 17, at 3, 6.

[63] *Id.* at 8.

[64] Lagoni, *supra* note 9, at 239.

[65] North Sea Cases, 1969 ICJ REP. at 22, para. 19; Convention on the Continental Shelf, *supra* note 22, Art. 2; LOS Convention, *supra* note 1, Art. 77. *See also* part II *supra*; 2 O'CONNELL, *supra* note 31, at 691–93.

Lagoni also casts doubt on the applicability of the unitization principle to the delimitation of overlapping continental shelf claims, noting that the unity of the deposit is an idea that originated in the international law of rivers, where it was not linked to delimitation per se.[66] Yet there is no obvious reason why cooperative principles derived from the international law of shared natural resources cannot be applied by analogy to the international law of continental shelf boundary delimitation in the situation considered here. In fact, maritime delimitation is not really the issue, in the sense that drawing a boundary alone will not resolve the question should a deposit be found to lie across that line. Rather, the issue is whether a suitable international legal framework is evolving that would enable states to efficiently exploit shared mineral resources at present or in the near future. If the issue is viewed in this way, there is no valid reason why the doctrine of equitable apportionment as it has developed in the law of international rivers and drainage basins, which stipulates that the legitimate interests of the states concerned must be weighed against each other in accordance with the circumstances of the case,[67] cannot equally be applied in this context.

The preservation of the unity of such a deposit is therefore intrinsic to any agreement between interested states, be it a boundary delimitation agreement incorporating a transboundary unitization clause, or a joint development agreement,[68] and unitization appears to be the legally appropriate and efficient solution for exploiting the common deposit.

IV. Is There an Obligation to Cooperate?

The International Legal Regime of Cooperation regarding a Common Deposit

In the absence of a multilateral convention or well-established rules of customary international law setting forth a general international obligation to cooperate with respect to shared natural resources, the legal basis for such an obligation must be determined by analyzing less authoritative, but nevertheless important, secondary sources of international law. These include General Assembly resolutions and other UN instruments, relevant multilateral conventions such as the 1982 LOS Convention, relevant international case law and the writings of well-known publicists. These sources will be explored to assess the nature and extent of the obligation to cooperate in the specific case of a common deposit.

UN General Assembly resolutions. Certain General Assembly resolutions arguably have a more obligatory quality than others because of their general acceptance and the legal character of their wording. In particular, resolutions passed by an overwhelming majority of the member states and not objected to by any significant group of states may be held to indicate the willingness of the international community to be guided by the principles they embody, even if it cannot be held to be legally bound by them. Viewed in this way, certain widely accepted General Assembly resolutions can be said to be statements of intention by the member states regarding the subject of the resolution.[69]

[66] Lagoni, *supra* note 9, at 239.

[67] *See id.* at 236 (citing Helsinki Rules on the Uses of the Waters of International Rivers, Art. 4, 51 ILA, CONFERENCE REPORT 484 (1966), now provided in part II (Arts. 5–10) of the Convention on the Law of the Non-Navigational Uses of International Watercourses, May 21, 1997, UN Doc. A/51/869, 36 ILM 700 (1997)). See also the bilateral agreements cited by Onorato, *supra* note 34, at 95–96.

[68] Miyoshi, *Basic Concept, supra* note 8, at 8.

[69] Byers, for example, noted recently that

> many non-industrialised States and a significant number of writers have asserted that resolutions and declarations are important forms of State practice which are potentially creative, or at least indicative, of rules of customary international law. The International Court of Justice appears to have reinforced this view by accepting, in its judgment in the 1986 *Nicaragua Case (Merits),* that a series of United Nations General Assembly resolutions played a major role in the development of rules of customary international law prohibiting intervention and aggression. However, these assertions have, in turn, been resisted by many powerful States and some writers.

On a broad front, states are urged to cooperate in the resolution of international problems and, in particular, to settle their disputes by peaceful means in accordance with Chapter VI of the UN Charter.[70] On the specific subject of shared natural resources, Article 3 of the 1974 Charter of Economic Rights and Duties of States provides that "[i]n 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.*"[71] Most of the industrialized Western states either abstained or voted against this resolution.[72] However, the debate that preceded its adoption indicates that the main sticking point for these states concerned the expropriation of foreign assets under the guise of nationalization[73] rather than the above article exhorting cooperation in the exploitation of shared natural resources.[74] Moreover, similarly worded provisions requiring prior consultation can be found in a whole range of treaties regulating shared resources and the common economic interests of states.[75]

From an environmental perspective, the need to "co-operate in the . . . conservation and harmonious utilization of natural resources shared by two or more States" was recognized by the Governing Council of the UN Environment Programme (UNEP)[76] and subsequently noted by a General Assembly resolution.[77] The UNEP guidelines call upon states to cooperate in the equitable utilization of shared natural resources and in the protection of the environment from the adverse effects of that utilization. To these ends, the guidelines provide for, inter alia, exchange of information, notification of plans and consultations between interested states. The General Assembly responded by exhorting all states "to use the principles as guidelines and recommendations in the formulation of bilateral or multilateral conventions regarding natural resources shared by two or more States, on the basis of the principle of good faith and in the spirit of good neighbourliness."[78] The net effect of these numerous references to general principles of cooperation in respect of shared natural resources and environmental protection is to imply that "States today are under an obligation to recognize the correlative rights of other States and at least to consult with them as regards concurrent uses of transboundary resources."[79]

Convention on the Law of the Sea. The general principles expressed in hortatory language above acquired a higher legal authority in the maritime sphere when they were incorpo-

MICHAEL BYERS, CUSTOM, POWER AND THE POWER OF RULES: INTERNATIONAL RELATIONS AND CUSTOMARY INTERNATIONAL LAW 135 (1999).

[70] *See* Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations, GA Res. 2625 (XXV), UN GAOR, 25th Sess., Supp. No. 28, at 121, UN Doc. A/8028 (1970) (adopted without a vote).

[71] GA Res. 3281 (XXIX), UN GAOR, 29th Sess., Supp. No. 30, at 50, UN Doc. A/9030 (1974) (emphasis added).

[72] The charter was adopted by 120-6, with 10 abstentions. The countries voting against the charter were Belgium, Denmark, the Federal Republic of Germany, Luxembourg, the United Kingdom and the United States. The abstaining states were Austria, Canada, France, Ireland, Israel, Italy, Japan, the Netherlands, Norway and Spain.

[73] A separate vote was taken on Article 2(2)(c), which allowed the nationalization or expropriation of foreign property. The majority in favor was 104-16, with 6 abstentions. *See* D. J. HARRIS: CASES AND MATERIALS ON INTERNATIONAL LAW 550 (5th ed. 1998).

[74] Nevertheless, this article was passed by a separate vote of 100-8, with 28 abstentions, the largest number of abstentions on the 1974 charter; the vote on this article reflected the difficulty of establishing a legal regime for shared natural resources that does not impinge on the principle of permanent sovereignty over natural resources. *See* SCHRIJVER, *supra* note 39, at 110, 131 & 337 n.112.

[75] *See* JUDO UMARTO KUSUMOWIDAGDO, CONSULTATION CLAUSES AS MEANS FOR PROVIDING FOR TREATY OBEDIENCE 145–46 (1981) ("Either tacitly or expressly, all treaties of common interests in the use of common [re]sources anticipate the operation of the rule of consultation prior to action.").

[76] Draft Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared by Two or More States, UNEP Doc. GC Dec. No. 6/14, *reprinted in* UN Doc. A/33/25, at 154 (1978), 17 ILM 1097 (1978), adopted by consensus on May 19, 1978, although three Latin American states (Brazil, Colombia and Mexico) declared that they were unable to join the consensus. *See* 17 ILM at 1092–93.

[77] GA Res. 34/186, UN GAOR, 34th Sess., Supp. No. 46, at 123, UN Doc. A/34/46 (1979).

[78] *Id.*, para. 3. *See* SCHRIJVER, *supra* note 39, at 132–33.

[79] SCHRIJVER, *supra* note 39, at 338.

rated in the LOS Convention. Significantly, the Convention represents a progressive approach to the perennial problem of expanding coastal state jurisdiction by imposing the principle of cooperation on states whose interests may conflict. This general principle of cooperation is embodied at the regional level in 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." This provision is relevant to several joint development agreements regarding semienclosed seas; for example, the Malaysia-Thailand, Malaysia-Vietnam and Indonesia-Australia agreements on the South China Sea and the Timor Sea.[80] The United Kingdom–Norway and United Kingdom–Netherlands transboundary unitization agreements also concern a semienclosed sea, namely, the North Sea.[81] Similar examples can be found in the Persian Gulf.[82]

To what extent does this general requirement of cooperation apply to common petroleum deposits found in these and other semienclosed seas? It has been suggested that the principle of regional cooperation with respect to semienclosed seas can be regarded as progressive development toward fulfilling the general requirement to cooperate in the conservation and management of marine natural resources.[83] However, two factors cast doubt on the legal force of the duty to cooperate in this article. First, the language of the article does not incorporate a specific and legally enforceable obligation, being more exhortatory than obligatory.[84] Second, the requirements for cooperative efforts specify such activities as the conservation of marine living resources, protection of the marine environment and coordination of marine scientific research,[85] rather than the joint development of hydrocarbon and other nonliving resources.

Balanced against these difficulties, however, is the suggestion that Article 123 conveys a duty to cooperate notwithstanding the change of terms from the initial draft at the Law of the Sea Conference to the final one, which substituted "should" for "shall" in the operative part of the provision. The principle of cooperation in Article 123 has been traced back to the UN Charter and the 1970 Declaration on Principles of International Law and some observers assert that it goes beyond a mere recommendation and constitutes a legal obli-

[80] Article 122 of the LOS Convention, *supra* note 1, provides that an "enclosed or semi-enclosed sea" means, inter alia, a sea consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal states. For the agreements, see, regarding Malaysia and Thailand, *supra* note 19; and Memorandum of Understanding for the exploration and exploitation of petroleum in the Gulf of Thailand, June 5, 1992, Malaysia-Vietnam, *in* Ted L. McDorman, *Malaysia-Vietnam*, Report No. 5-19, 3 MARITIME BOUNDARIES, *supra* note 10, at 2335, 2341 (1998); Treaty on the Zone of Cooperation in an Area between the Indonesian Province of East Timor and North Australia, Dec. 11, 1989, Austl.-Indon., 29 ILM 469 (1990), *reprinted in* J. R. V. Prescott, *Australia-Indonesia*, Report No. 6-2(5), MARITIME BOUNDARIES, *supra* note 10, at 1245.

[81] Namely, the Frigg, Statfjord and Murchison Field Agreements, *supra* note 14, made pursuant to Article 4 of the 1965 Continental Shelf Agreement between the United Kingdom and Norway; and the Markham Field Agreement, *supra* note 14, made pursuant to Article 1 of the 1965 Continental Shelf Agreement between the United Kingdom and the Netherlands.

[82] For example, Agreement Concerning the Delimitation of the Continental Shelf in the Persian Gulf, Feb. 22, 1958, Bahr.–Saudi Arabia, UNITED NATIONS, NATIONAL LEGISLATION AND TREATIES RELATING TO THE LAW OF THE SEA 409, UN Doc. ST/LEG/SER.B/16, UN Sales No. E/F.74.V.2 (1974) [hereinafter LEGISLATION AND TREATIES], 5 NEW DIRECTIONS, *supra* note 20, at 207 (R. R. Churchill, Myron H. Nordquist & S. Houston Lay eds., 1977); Agreement Relating to the Partition of the Neutral Zone, July 7, 1965, Kuwait–Saudi Arabia, 4 ILM 1134 (1965); Agreement on the Settlement of Maritime Boundary Lines and Sovereign Rights over Islands, Mar. 20, 1969, Qatar–Abu Dhabi, LEGISLATION AND TREATIES, *supra*, at 403, *and in* Robert F. Pietrowski, Jr., *Qatar–United Arab Emirates (Abu Dhabi)*, Report No. 7-9, MARITIME BOUNDARIES, *supra* note 10, at 1541; Memorandum of Understanding, Nov. 18, 1971, Iran-Sharjah, *reprinted in* ALI A. EL-HAKIM, THE MIDDLE EASTERN STATES AND THE LAW OF THE SEA 208 (1979).

[83] *See* M. L. Pecoraro, *The Concept of Enclosed and Semi-Enclosed Seas in the New Law of the Sea*, 1989 Y.B. II UNIVERSITÀ DEGLI STUDI DI ROMA, DIPARTIMENTO DI DIRITTO PUBBLICO 369, 379.

[84] *See* Gunther Jaenicke, *Cooperation in the Baltic Sea, in* THE LAW OF THE SEA IN THE 1980S: PROCEEDINGS 493, 509 (Choon-ho Park ed., 1983).

[85] LOS Convention, *supra* note 1, Art. 123(a), (b) & (c), respectively.

gation to coordinate activities in respect of marine living resources, the marine environment and marine scientific research within a semienclosed sea.[86]

Even if it does not apply directly to nonliving resources, the cooperative principle regarding shared marine living resources and the regional marine environment serves a useful function in finding an analogous cooperative nature in the legal regime applicable to common deposits within relatively narrow semienclosed seas such as the North Sea, the Mediterranean Sea, the Persian Gulf, and the South China Sea. It may also be reasonably asked why a principle enjoining cooperation in respect of common marine resources in semienclosed seas was included in the Convention at all if it was meant to establish no legal effect but only a moral obligation. The obligation to cooperate has been interpreted as requiring states with interests in a common resource to negotiate in good faith with a view to concluding an agreement.[87] The strength of this requirement obviously varies according to the subject matter it is intended to govern and its overall status as a binding principle of international law remains uncertain. Nevertheless, at the very least, this provision may be held to imply a prohibition on the conclusion of agreements detrimental to the interests of any of the states bordering on the semienclosed sea.[88]

As for the continental shelf, the Convention requires states to cooperate toward reaching agreement regarding their delimitation disputes.[89] The states concerned are also required to make every effort to enter into practical provisional arrangements, presumably as a precaution against the discovery of common mineral or hydrocarbon deposits, prior to concluding the final delimitation agreement.[90] These provisional arrangements must be made in a spirit of understanding and cooperation. States shall further make every effort not to jeopardize or hamper the reaching of a final agreement over the disputed area. Significantly, the language used here is similar to that found in the transboundary deposit clauses of many maritime boundary delimitation agreements; such clauses were initially conceived for the North Sea, but they are now prevalent in agreements on several other marine regions, especially the Middle East, the Caribbean and Pacific Asia generally, and Southeast Asia specifically.[91] The main difference between these two types of provisions relates only to their respective position on the time-space continuum during which the dispute evolves: the provisional arrangements focus on situations involving overlapping continental shelf claims,[92] whereas the transboundary deposit clauses come into play once a petroleum field is found to lie across an already delimited boundary. The latter provisions are included in most continental shelf boundary agreements and invariably call for negotiations on a further agreement regarding the most effective way to exploit the deposit. One scholar suggests that these clauses have provided the foundation for many subsequent transboundary unitization agreements around the world.[93]

[86] *See* Budislav Vukas, *Commentary, in* THE LAW OF THE SEA IN THE 1980S, *supra* note 84, at 531. This view is endorsed by Pecoraro, who also interprets Article 123 as conferring a right on the coastal states of a semienclosed sea to safeguard their individual and collective interests in the management and conservation of the living and "non-living resources" there. The obligation to cooperate must be fulfilled by means of positive action and measures that do not cause detriment to or impinge upon the rights of the other coastal states to enjoy the common resources. However, Pecoraro does not include common offshore petroleum deposits within the meaning of "non-living resources." Pecoraro, *supra* note 83, at 378–79.

[87] Lagoni, *Commentary, in* THE LAW OF THE SEA IN THE 1980S, *supra* note 84, at 520.

[88] *See* Janusz Symonides, *The Legal Status of the Enclosed and Semi-Enclosed Seas*, 1984 GER. Y.B. INT'L L. 315, 327.

[89] LOS Convention, *supra* note 1, Art. 83(1).

[90] *Id.*, Art. 83(3).

[91] *See* Kwiatkowska, *supra* note 10, at 87 n.49; and Colson, *supra* note 11, at 55–56 nn.70–77. Examples of Southeast Asian agreements on delimitation of the continental shelf that incorporate such clauses can be found in David Ong, *Southeast Asian State Practice on the Joint Development of Offshore Oil and Gas Deposits, in* PEACEFUL MANAGEMENT, *supra* note 17, at 77, 83–84. *See also* KRIANGSAK KITTICHAISAREE, THE LAW OF THE SEA AND MARITIME BOUNDARY DELIMITATION IN SOUTH-EAST ASIA 69–70 (1987).

[92] Significantly, Article 83 is specifically referred to in the Preamble to the 1989 Timor Gap Treaty between Indonesia and Australia, *supra* note 80.

[93] *See* Townsend-Gault, *supra* note 41, at 5–6.

However, the exact nature of the provisional arrangements envisaged under Article 83(3) is unspecified. Only a general obligation to cooperate applies when deposits lie across already delimited boundary lines or are situated in areas of overlapping claims. The substantive content of this cooperative requirement is uncertain.[94] The negotiating governments are not constrained, either by international law or by deadlines, to reach agreement.[95] The only recourse available should the negotiations prove fruitless is resort to the compulsory dispute settlement procedures under Part XV of the Convention.[96] This provision at least implies that the negotiations are subject to a notional time limit, since the dispute settlement procedures can be invoked if no agreement is reached "within a reasonable period of time." Even this possibility is limited, as states may declare in writing at any time that they will not accept compulsory settlement of certain categories of disputes including, inter alia, those relating to sea boundary delimitations.[97]

The negotiations on provisional arrangements must be conducted in good faith under both general international law and Article 300 of the LOS Convention. Specifically, the negotiating states are obliged to act in a manner that would not constitute an abuse of rights when exercising the rights, jurisdiction and freedoms recognized under the Convention. The duty to negotiate in good faith is widely recognized as a general principle well-founded in international law[98] and arguably precludes any state from prolonging the negotiation period unnecessarily or unjustifiably.[99] In the *North Sea Continental Shelf* cases, for example, this standard of good faith in the context of negotiations on continental shelf boundary agreements is met by application of the so-called equitable principles that such agreements are supposed to reflect.[100]

Yet another provision in the LOS Convention, which concerns the analogous situation of resource deposits lying across the limits of national jurisdiction and the (deep seabed) Area, establishes explicit guidelines for the conduct of interested parties.[101] Activities within the Area in respect of such deposits shall be conducted with due regard for the rights and legitimate interests of the coastal state(s) concerned.[102] Moreover, a system of prior notification and consultation shall be maintained to avoid infringement of those rights and interests.[103] Finally, when 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.[104] This requirement can arguably be ascribed to neighboring coastal states in the analogous situation of areas of overlapping continental shelf claims. Indeed, these principles

[94] *Id.* at 5. *See also* Lagoni, *supra* note 16, at 358.

[95] *See* D. H. Anderson, *Strategies for Dispute Resolution: Negotiating Joint Agreements, in* BOUNDARIES AND ENERGY: PROBLEMS AND PROSPECTS 473, 476 (Gerald Blake et al. eds., 1998).

[96] LOS Convention, *supra* note 1, Art. 83(2).

[97] *Id.*, Art. 298(1)(a)(i).

[98] Article 33(1) of the UN Charter, for example, provides that parties to any dispute are required to seek a solution, inter alia, by negotiation.

[99] For example, in the North Sea Cases, 1969 ICJ REP. at 47, para. 85, the ICJ held that the states concerned were obliged to enter into negotiations with a view to arriving at an agreement, and that these negotiations had to be meaningful. Indeed, Goldie suggests that this requirement of good faith denotes an objective standard by which to evaluate a state's conduct. L. F. E. Goldie, *Delimiting Continental Shelf Boundaries, in* LIMITS TO NATIONAL JURISDICTION OVER THE SEA 3, 18 (George T. Yates III & John Hardin Young eds., 1974).

[100] These equitable principles include, inter alia, the general configuration of the relevant coastline, the physical and geological structure, and availability of natural resources in the disputed area, as well as a reasonable degree of proportionality between the extent of the continental shelf area appertaining to the coastal state and the length of its coast measured in the general direction of the coastline. *See* North Sea Cases, 1969 ICJ REP. at 54–55, para. 101(D).

[101] LOS Convention, *supra* note 1, Art. 142. One of these parties will be the International Sea-Bed Authority, which has overall responsibility for the deep seabed regime. *See id.*, Arts. 137(2), 156–58.

[102] *Id.*, Art. 142(1).

[103] *Id.*, Art. 142(2).

[104] *Id.*

and procedures could form the basis for a joint development regime between the interested state(s) and the International Sea-Bed Authority, as well as between two or more states.[105]

International case law. It is also useful to consider the decision in the *North Sea Continental Shelf* cases, and particularly Judge Jessup's separate opinion, to gauge the judicial response to this issue. The ICJ did not consider the unity of a deposit a "special circumstance" that would justify a boundary deviation but did hold that it was another factor to be taken into consideration in the delimitation process, albeit as no more than a factual element.[106] More significant, in view of their weight as state practice, two recently concluded treaties were singled out by the Court; they specifically provided for the regulation of a transboundary deposit[107] and shared natural resources in a then-undelimited area.[108] Observing these arrangements with approval, the Court noted with regard to the problem of a deposit lying on both sides of the continental shelf boundary:

> 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.[109]

The ICJ also held that joint exploitation agreements were "particularly appropriate when it is a question of preserving the unity of a deposit" in areas of overlapping, but equally justifiable, claims.[110]

In his separate opinion, Judge Jessup took up the argument concerning continental shelf areas where interested states have equally justifiable claims. He noted that, aside from the North Sea and Ems Estuary agreements, other agreements in the Persian Gulf[111] provided for joint exploitation or profit sharing in areas where the national boundaries were undetermined, or had recently been agreed upon subject to the conclusion of arrangements for joint interests.[112] Thus, he concluded that the principle of joint exploitation might have wider application in agreements on overlapping areas of disputed continental shelf that were yet to be delimited.[113] The favorable disposition of the Court and especially Judge Jessup toward joint development cannot be presumed to amount to any more than an endorsement of such arrangements, since the Court's statement was clearly *obiter dictum* with respect to the legal question it was actually answering. However, one can argue that pronouncements like these serve to "aid the identification of rules created by States"[114] for such a relatively new legal concept as joint development, and thus contribute to establishing "the general principles of law recognized by civilized nations"[115] on this subject.

That some international jurists favor cooperative action is evidenced by the recommendation of the Conciliation Commission that Iceland and Norway initiate joint development of the shared mineral resources in a disputed continental shelf area between Iceland and Jan

[105] Yu, *supra* note 10, at 101.

[106] North Sea Cases, 1969 ICJ REP. at 52, para. 97. See also Continental Shelf (Tunis./Libya), 1982 ICJ REP. 18, 77–78, para. 107 (Feb. 24) [hereinafter Tunisia/Libya], where the ICJ was prepared to regard the presence of oil wells in an area to be delimited as "an element to be taken into account in the process of weighing all relevant factors to achieve an equitable result," *quoted in* 2 O'CONNELL, *supra* note 31, at 712.

[107] The UK-Norwegian Continental Shelf Agreement, *supra* note 12, Art. 4.

[108] Supplementary Agreement to the Treaty concerning Arrangements for Co-operation in the Ems Estuary (Ems-Dollard Treaty, 1960), May 14, 1962, Neth.-FRG, 509 UNTS 140.

[109] North Sea Cases, 1969 ICJ REP. at 52–53, para. 97.

[110] *Id.* at 52, para. 99.

[111] For example, the Agreement between Kuwait and Saudi Arabia relating to the Partition of the Neutral Zone, *supra* note 82; and the Agreement on the Continental Shelf between Bahrain and Saudi Arabia, *supra* note 82.

[112] North Sea Cases, 1969 ICJ REP. at 82 (Jessup, J., sep. op.).

[113] *Id.*

[114] R. R. CHURCHILL & A. V. LOWE, THE LAW OF THE SEA 10 (2d rev. ed. 1988).

[115] ICJ STATUTE Art. 38(1)(c). A similar point is made by Onorato, *supra* note 34, at 89; and Onorato, *supra* note 30, at 330–31.

Mayen (Norway).[116] The commission, which was established in 1980, suggested a single dividing line for both the continental shelf and the exclusive economic zone. As regards the overlapping area claimed by both states, the commission recommended the adoption of a joint development agreement covering "substantially all of the area offering any significant prospect of hydrocarbon production."[117] It also recommended the unitization of deposits found lying across the line.[118] It is significant that the commission favored joint development rather than the mere drawing of a maritime boundary.

Although the commission had exceeded its terms of reference in recommending joint development, this approach was adopted in the subsequent 1981 Agreement on the Continental Shelf between Iceland and Jan Mayen.[119] The joint development zone lies across the agreed joint continental shelf/EEZ maritime boundary. Initial seismic and magnetic surveys were carried out by the Norwegian Petroleum Directorate on behalf of both parties and at Norway's expense.[120] More detailed surveying and exclusive exploration and production have been carried out under joint-venture contracts, although the parties may agree on some other type of contract.[121] Both national and private petroleum companies can enter into such contracts.[122] Each party may participate on the basis of a 25 percent share in any hydrocarbon development activities of the other party.[123]

Norwegian petroleum, safety and environmental laws apply in the northern (Norwegian) sector of the joint zone and Icelandic laws apply in the southern (Icelandic) sector.[124] The Agreement is weighted in favor of Iceland, since in its sector of the joint zone Norway is obliged to negotiate licensing arrangements that impose both the Norwegian and Icelandic percentage of the costs on the prospecting company (or companies) until commercial finds are declared.[125] Iceland is not subject to this requirement.[126] Should commercial finds be declared in the Norwegian sector of the joint zone, Iceland is entitled to participate (on the basis of a 25 percent share) in their development simply by reimbursing Norway for its share of the costs incurred up to that point.[127] No corresponding entitlement is provided for Norway. Moreover, for petroleum fields that straddle the joint continental shelf/EEZ maritime boundary or lie entirely within the Icelandic shelf but extend beyond the limits of the joint zone, the usual unitization principles apply; detailed rules in these cases are to be negotiated between the parties.[128] On the other hand, any deposits that lie wholly north of the delimitation line (i.e., in the Norwegian sector) but extend beyond the limits of the joint zone shall nevertheless be considered to lie completely within the joint zone, which entitles Iceland to at least a 25 percent share in their exploitation.[129]

This trend in supportive judicial opinion and consequent state practice on joint development has continued. For example, in the aftermath of the 1982 *Continental Shelf* case

[116] Conciliation Commission on the Continental Shelf Area between Iceland and Jan Mayen, Report and Recommendations to the Governments of Iceland and Norway, 20 ILM 797 (1981).

[117] *Id.* at 826.

[118] *Id.* at 839.

[119] Agreement on the Continental Shelf between Iceland and Jan Mayen, Oct. 22, 1981, Ice.-Nor., 21 ILM 1222 (1982). *See also* D. H. Anderson, *Iceland-Norway (Jan Mayen)*, Report No. 9-4, *in* MARITIME BOUNDARIES, *supra* note 10, at 1755.

[120] Agreement on the Continental Shelf, *supra* note 119, Art. 3.

[121] *Id.*, Art. 4.

[122] *Id.*

[123] Agreement on the Continental Shelf, *supra* note 119, Arts. 5, 6.

[124] *Id.*, Arts. 5 & 6, respectively.

[125] *Id.*, Art. 5.

[126] *Id.*, Art. 6.

[127] *Id.*, Art. 5.

[128] *Id.*, Art. 8.

[129] *Id. See* 1 FOX ET AL., *supra* note 8, at 63.

between Tunisia and Libya,[130] the maritime boundary dispute was settled amicably. The two countries have signed three agreements. The first, on August 8, 1988, delimited the continental shelf boundary as indicated in the 1982 Judgment. The second agreement designated a joint exploration zone in the Gulf of Gabes area,[131] which is divided into two parts by the continental shelf boundary. It also prescribed measures for a joint development undertaking, including the creation and financing of joint-venture projects for oil exploration and exploitation.[132] A joint Libyan-Tunisian exploration company was established in Tunisia and given special status as an offshore enterprise to explore the gas field in the northwestern part of the joint zone. By a third agreement, Tunisia is to receive 10 percent of the income from future production in the El Bouri oil fields on the Libyan side of the continental shelf, corresponding to the southeastern part of the joint exploration zone.[133]

Interestingly, Judge *ad hoc* Evensen, in a dissenting opinion in the 1982 case, had proposed a similar system of joint exploitation of petroleum resources, based on his view that joint development represented an alternative equitable solution to the maritime boundary dispute.[134] The parties apparently implemented Judge Evensen's suggestions even though they were contained in a dissenting opinion. Judge Evensen had envisaged a wedge-shaped joint development zone incorporating continental shelf areas on both sides of the maritime boundary line. Each party would retain jurisdiction on its side of the line and would be entitled to participate on a 50 percent basis, either directly or through its nominated concessionaires, in the other party's sector of the joint zone.[135] A permanent consultative committee for petroleum development activities would be established in the joint development zone and unitization procedures prescribed in case a deposit straddled the boundary line or the outer limits of the zone.[136]

These judicial pronouncements indicate that cooperation with a view toward some form of joint exploitation is increasingly being contemplated as a legally viable alternative to the usual methods of delimitation. These judicial opinions also provide some authority for the proposition that the scope of the general rule requiring cooperation[137] is not limited to deposits that straddle international boundaries but extends to common deposits in areas of overlapping claims.

Bilateral state practice in joint development. In the practice of states, joint development has also proved to be an effective option for cooperation in the exploration and exploitation of shared mineral resources.[138] Numerous bilateral joint development agreements[139] can

[130] Tunisia/Libya, 1982 ICJ REP. at 18.

[131] *See* 1 FOX ET AL., *supra* note 8, at 64.

[132] MIYOSHI, OIL AND GAS, *supra* note 8, at 35–36; *see also* Tullio Scovazzi, *Libya-Tunisia*, Report No. 8-9, *in* MARITIME BOUNDARIES, *supra* note 10, at 1663, 1664.

[133] *See* 1 FOX ET AL., *supra* note 8, at 64.

[134] Tunisia/Libya, 1982 ICJ REP. at 320–23 (Evensen, J., dissenting). Judge Evensen was also a member of the Norway-Iceland Conciliation Commission that recommended a similar solution to the *Jan Mayen* dispute, later provided for in the 1981 Agreement, *supra* note 119.

[135] Tunisia/Libya, 1982 ICJ REP. at 320–23 (Evensen, J., dissenting).

[136] *Id.*

[137] As opposed to the specific rule requiring positive or proactive cooperation with a view to joint development espoused by Onorato, *supra* note 30, at 332–37.

[138] *See* 1988 ILA Report, *supra* note 8, at 1.

[139] A chronological, but nonexhaustive, list of these agreements includes the following: Agreement concerning the Delimitation of the Continental Shelf in the Persian Gulf, between Bahrain and Saudi Arabia, *supra* note 82; Agreement concerning the Working of Common Deposits of Natural Gas and Petroleum, Jan. 23, 1960, Czech Rep.–Aus., 495 UNTS 134; Supplementary Agreement concerning Arrangements for Co-operation in the Ems Estuary, between the Netherlands and Germany, *supra* note 108; Agreement Relating to Partition of the Neutral Zone, between Kuwait and Saudi Arabia, *supra* note 82; Agreement on the Settlement of Maritime Boundary Lines and Sovereign Rights over Islands, between Qatar and Abu Dhabi, *supra* note 82; Memorandum of Understanding, between Iran and Sharjah, *supra* note 82; Convention on the Delimitation of the Continental Shelf of the Two States in the Bay of Biscay, Jan. 29, 1974, Fr.-Spain, LEGISLATION AND TREATIES, *supra* note 82, at 445, UN Doc. ST/LEG/SER.B/19, UN Sales No. E/F.80.V.3 (1980), 5 NEW DIRECTIONS, *supra* note 20, at 251; Agreement concerning Joint Development of the Southern Part of the Continental Shelf Adjacent to the Two Countries,

now be found in many different regions of the world.[140] Both their increasing numbers and their geographical diversity refute any attempt to dismiss their repeated occurrence as merely coincidental. Thus, the lack of a binding obligation to cooperate in the joint exploitation of a common deposit has less to do with a lack of state practice than with the absence of that other imperative in the formation of customary international law, namely *opinio juris*, the psychological or subjective element of acceptance of the obligation as binding in law.

The lingering uncertainty over the existence of a rule of customary international law enjoining cooperation in the form of joint development is enhanced by the fact that no one type or model of joint development agreement appears to predominate in numerical terms alone. As the British Institute of International and Comparative Law observed: "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."[141] The three basic models, considered in terms of the sophistication of their cooperative arrangements from the simplest to the most complex, are described below.

(1) The first model is arguably the simplest option available to interested states because it requires the least amount of effort in the way of formal bilateral cooperation and legal and institutional harmonization. Under this model one state manages the development of the deposits located in a disputed area 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. Of late 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. Many states are reluctant to put themselves into this position, especially when a disputed seabed area subject to overlapping claims is involved. These states fear appearing to accept, however implicitly, a status quo that confers de facto jurisdiction on the other state, even if the de jure position is explicitly reserved. Such apparent acceptance may cast doubt on the strength of these states' claims to the area.[142]

between Japan and South Korea, *supra* note 20; Agreement Relating to the Joint Exploitation of the Natural Resources of the Sea-bed and Sub-soil of the Red Sea in the Common Zone, May 16, 1974, Sudan–Saudi Arabia, LEGISLATION AND TREATIES, *supra*, at 452, UN Doc. ST/LEG/SER.B/18, UN Sales No. E/F.76.V.2 (1976), 5 NEW DIRECTIONS, *supra*, at 393; Agreement Relating to the Exploitation of the Frigg Field Reservoir and the Transmission of Gas Therefrom to the United Kingdom, between the United Kingdom and Norway, *supra* note 14; Memorandum of Understanding on the Establishment of a Joint Authority for the Exploitation of the Resources in the Sea-bed in a Defined Area of the Continental Shelf of the Two Countries in the Gulf of Thailand, between Malaysia and Thailand, *supra* note 19; Agreement on the Constitution and Other Matters Relating to the Establishment of the Malaysia-Thailand Joint Authority, between Malaysia and Thailand, *supra* note 19; Agreement on the Continental Shelf between Iceland and Jan Mayen, between Iceland and Norway, *supra* note 119; (Aden) Agreement for the Exploitation of (and Investment in) the Joint Area between the Two Sectors of Yemen, Nov. 19, 1988, Yemen Arab Republic–People's Democratic Republic of Yemen, *in* YEMEN ARAB REPUBLIC, BUREAU OF UNITY AFFAIRS, UNITED YEMEN 239 (3d series of Official Documents on Yemeni Unification, 1989) (in Arabic), *see* William T. Onorato, *Joint Development in the International Petroleum Sector: The Yemen Variant*, 39 INT'L & COMP. L.Q. 653 (1990); Treaty on the Zone of Cooperation in an Area between the Indonesian Province of East Timor and North Australia, between Australia and Indonesia, *supra* note 80; Memorandum of Understanding for the exploration and exploitation of petroleum in the Gulf of Thailand, between Malaysia and Vietnam, *supra* note 80; Maritime Delimitation Treaty, Nov. 12, 1993, Jam.-Colom., *in* Kaldone G. Nweihed, *Colombia-Jamaica*, Report No. 2-18, MARITIME BOUNDARIES, *supra* note 10, at 2179, 2200 (1998); Management and Co-operation Agreement, Oct. 14, 1993, Sen.–Guinea-Bissau, and Protocol of Agreement relating to the Organization and Operation of the Agency for Management and Co-operation, June 12, 1995, Sen.–Guinea-Bissau, LAW SEA BULL., July 1996, at 40 & 42, respectively, *and in* J. R. Victor Prescott, *Guinea-Bissau–Senegal*, Report No. 4-4(4) & (5), MARITIME BOUNDARIES, *supra*, at 2251, 2257; Joint Declaration on Co-operation over Offshore Activities in the South West Atlantic, Sept. 27, 1995, Arg.-UK, 35 ILM 301 (1996), *reprinted in* 11 INT'L J. MARINE & COASTAL L. 113 (1996), *see* R. R. Churchill, *Falkland Islands—Maritime Jurisdiction and Co-operative Arrangements with Argentina*, 46 INT'L & COMP. L.Q. 463 (1997).

[140] Specifically, the North Sea, the Middle East, and the East and Southeast Asian regions. See the list of joint development and transboundary unitization agreements, *supra* note 139.

[141] 1 FOX ET AL., *supra* note 8, at 115.

[142] *Id.* at 149, 152.

Examples of this model include the 1958 Saudi Arabia–Bahrain and the 1969 Abu Dhabi–Qatar Agreements. The 1958 Agreement[143] divided a disputed area of continental shelf in the Persian Gulf between the two parties.[144] It simultaneously provided for the equal sharing of the net income derived from the exploitation of the Fashtu bu Saafa Hexagon, an area lying on the Saudi side of the delimited continental shelf boundary.[145] The division of net revenues was made on the understanding that it would not infringe Saudi rights of "sovereignty" and administration over the designated area.[146] This simple arrangement did not provide for, or even acknowledge, the rights of Bahrain, except for its entitlement to half of the net revenues from the designated area.

The 1969 Agreement[147] provides that both Abu Dhabi and Qatar shall have equal rights of ownership over a single oil field, the Hagl El Bundug, even though the delimitation places most of the field within the maritime jurisdiction of Qatar.[148] The field is developed by the Abu Dhabi Marine Areas Co. in accordance with the terms of the concession granted to it by the ruler of Abu Dhabi, with all revenues, profits and benefits divided equally between the two Governments.[149] The 1989 Australia-Indonesia Timor Gap Treaty[150] affords another example of this type of joint development in respect of areas *B* and *C* of the zone of cooperation; each state unilaterally administers the area of the zone adjacent to its territory and pays 10 percent of any revenues to the other.[151]

(2) Another popular joint development option consists of an agreement establishing a system of compulsory joint ventures between the interested states and their national or other nominated oil companies in designated joint development zones. A prime example of this model is the 1974 Agreement between Japan and the Republic of (South) Korea,[152] which provides for exploration and exploitation in a defined joint development zone,[153] to be carried out in further divided subzones by entities nominated by both states under a joint operating agreement[154] that, in turn, gives a single entity exclusive operational control over the relevant subzone.[155] Strategic control of hydrocarbon development in the joint zone is retained by the two states by requiring that both of them approve the joint operating agreements.[156] Although a Joint Commission is established,[157] its terms of reference are limited and designed for liaison purposes only.[158]

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

[143] Agreement between Bahrain and Saudi Arabia, *supra* note 82. *See* Robert F. Pietrowski, Jr., *Bahrain-Saudi Arabia*, Report No. 7-3, *in* MARITIME BOUNDARIES, *supra* note 10, at 1489.

[144] Agreement between Bahrain and Saudi Arabia, *supra* note 82, Art. 1.

[145] *Id.*, Art. 2.

[146] *Id.*

[147] Agreement between Qatar and Abu Dhabi, *supra* note 82. For commentary, see Yu, *supra* note 10, at 92–93; and 2 FOX ET AL., *supra* note 8, at 55–56.

[148] Agreement between Qatar and Abu Dhabi, *supra* note 82, Art. 6.

[149] *Id.*, Art. 7.

[150] Treaty between Australia and Indonesia, *supra* note 80.

[151] *Id.*, Art. 4(1)(b) & (2)(b), respectively.

[152] Agreement between Japan and South Korea, *supra* note 20. *See* Choon-ho Park, *Japan–South Korea*, Report No. 5-12, *in* MARITIME BOUNDARIES, *supra* note 10, at 1065.

[153] Delineated by Article II(1) of the Agreement between Japan and South Korea, *supra* note 80, and encompassing some 24,101 square nautical miles.

[154] *Id.*, Arts. III(1), IV(1) & V(1), respectively.

[155] *Id.*, Arts. V(1)(b), VI.

[156] *Id.*, Art. V(2). Approval is deemed to have been implicitly given unless one of the parties explicitly disapproves the operating agreement within two months of its submission to them for approval. *See also* 1 FOX ET AL., *supra* note 8, at 58, 116–32.

[157] Agreement between Japan and South Korea, *supra* note 20, Art. XXIV.

[158] *Id.*, Art. XXV. *See also* MIYOSHI, OIL AND GAS, *supra* note 8, at 14, 44.

before the Japan-Korea Agreement.[159] The delineated *zone spéciale* is divided into French and Spanish sectors, and sovereign rights and jurisdiction are similarly divided.[160] The nominated licensees of either party applying to explore the zone are encouraged to enter into joint ventures with the nominee of the other party on an equal basis, financing the operations in proportion to their shares.[161] Subsequent amendment of either the joint-venture agreements or the licensing regime in one party's sector of the zone must be notified to the other party.[162]

Under the 1992 Memorandum of Understanding between Malaysia and Vietnam, the parties agreed to nominate their respective national oil companies, Petronas (Malaysia) and Petrovietnam (Vietnam), to undertake the exploration and exploitation of petroleum within the defined area of overlapping continental shelf claims.[163] Both parties also agreed to urge their national oil companies to conclude a commercial agreement on the exploration and exploitation of petroleum in the defined area.[164] The commercial agreement is subject to the approval of the two governments.[165]

The Colombia-Jamaica Treaty of 1993 establishes a zone in which the parties exercise joint management and control over the exploration and exploitation of the living and nonliving resources.[166] In particular, activities related to the development of nonliving resources, marine scientific research and marine environmental protection are to be carried out on a joint basis agreed by both states.[167] The Treaty sets up a Joint Commission to facilitate these joint actions and to perform any other functions assigned to it by the parties within the ambit of the agreement.[168] The conclusions of the Joint Commission are to be reached by consensus and are recommendatory only, unless they are adopted by the parties, in which case they become binding.[169]

The 1995 Joint Declaration by Argentina and the United Kingdom provides for a similar, facilitative Joint Commission.[170] It is charged with submitting recommendations to the two governments on marine environmental protection, as well as the promotion, development and coordination of the hydrocarbon regime,[171] both within the designated special area(s) of cooperation[172] and beyond.[173] The coordination of the exploration and exploitation activities is assigned to a subcommittee of the commission.[174] Underlying the work of the Joint Commission, and indeed the entire Joint Declaration, is the states' acceptance of the need to cooperate not only in encouraging offshore activities in the southwest Atlantic,[175] but also in regulating the different stages of offshore activities undertaken by commercial operators, including the eventual abandonment of installations.[176] Petroleum exploration and exploitation in the special area(s) of cooperation is expected to proceed on a joint-

[159] Convention between France and Spain, *supra* note 152.
[160] *Id.*, Art. 3.
[161] *Id.*, Annex II, para. 2.
[162] *Id.*, paras. 5, 6.
[163] Memorandum of Understanding between Malaysia and Vietnam, *supra* note 80, Art. 3(a).
[164] *Id.*, Art. 3(b).
[165] *Id.*
[166] Maritime Delimitation Treaty between Jamaica and Colombia, *supra* note 139, Art. 3(1).
[167] *Id.*, Art. 3(2), (3).
[168] *Id.*, Art. 4(1).
[169] *Id.*, Art. 4(3).
[170] Argentina-UK Joint Declaration, *supra* note 139, paras. 2(a), 3. The two states formally established the Joint Commission at a meeting in Buenos Aires, held from February 29 to March 1, 1996.
[171] *Id.*, para. 4(a), (b) & (c).
[172] The coordinates of these areas are provided in an annex to the 1995 Joint Declaration.
[173] Argentina-UK Joint Declaration, *supra* note 139, para. 4(d).
[174] *Id.*, para. 4(b)(i–v).
[175] *Id.*, para. 2.
[176] *Id.*, para. 7.

venture basis, with 50 percent licensed by the Falkland Islands government and 50 percent by Argentina.[177]

A different version of this type of joint development agreement is the Kuwait–Saudi Arabia Agreement concluded in 1965, which, inter alia, provides for the exercise of joint and equal rights in the exploitation of the natural resources in the adjacent offshore area of the partitioned neutral zone.[178] Each state entered into a separate and different concession agreement with the same company in respect of its undivided 50 percent interest in the resources of the zone, and each state has an equal number of representatives on the board of directors of the company.[179] Each state is therefore entitled to 50 percent of the net revenues of the other state from its concession.

Yet another variation of this model is the Yemeni example. The so-called Aden Agreement of 1988[180] provides for joint investment in the development of hydrocarbon resources of the common region along the ill-defined boundary in the east-central/west-central parts of what was then the parties' territories. Under the Agreement, a jointly created and owned corporation was granted the rights to develop oil and minerals in the common region.[181]

(3) The third joint development model is the most complex and institutionalized option; it requires a much higher level of cooperation than the other two models, and consequently reduces national autonomy. This model consists of an agreement by the interested states to establish an international joint authority or commission with legal personality, licensing and regulatory powers, and a comprehensive mandate to manage the development of the designated zone on these states' behalf. Such joint authorities have been described as "strong" institutions with extensive supervisory and decision-making powers and wide-ranging functions, as opposed to the "weak" liaison or consultative type of bodies under the direction of the parties established by some agreements embodying the second joint development model, described above.[182]

The Sudan–Saudi Arabia Agreement of 1974[183] is an early example of this model. It established a Joint Commission charged with rather more powers and functions than those under either the 1974 Japan–South Korea or the 1995 Argentina–United Kingdom agreement, described above. The crucial differences related to the legal status of the commission itself and the legal powers it was granted, particularly regarding the licensing regime for the common zone. Under Article VIII, the Joint Commission has 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 is empowered to consider and decide on, in accordance with the conditions it prescribes, the applications for licenses and concessions concerning exploration and exploitation of the natural resources of the seabed in the common zone.[184]

Other examples of this model include the Malaysia-Thailand Joint Development Agreements of 1979–1990, which established the Malaysia-Thailand Joint Authority;[185] and the 1989 Timor Gap Zone of Co-operation Treaty between Australia and Indonesia, which

[177] *See* T. W. Wälde & Andrew McHardy, *Introductory Note*, 35 ILM 301, 302 (1996).

[178] Agreement between Kuwait and Saudi Arabia, *supra* note 82, Arts. IV and VI, read together.

[179] *See* 1 FOX ET AL., *supra* note 8, at 55, 132. *See also* Isa Huneidi, *The Saudi/Kuwait joint development areas of the Neutral Zone, onshore and offshore, in* 2 *id.* at 77, 84–86; Yu, *supra* note 10, at 92 (citing Arts. 4, 8 of the Agreement, *supra* note 82).

[180] Agreement between the then Yemen Arab Republic and the People's Democratic Republic of Yemen (now unified as the Republic of Yemen), *supra* note 139. Aden was a part of the People's Democratic Republic of Yemen.

[181] *See* Onorato, *supra* note 139, at 656–58 (citing part 2, Art. 7 of the Yemen Agreement, *supra* note 139).

[182] *See* MIYOSHI, OIL AND GAS, *supra* note 8, at 43–44.

[183] Agreement between Sudan and Saudi Arabia, *supra* note 139.

[184] *Id.*, Art. VII(d).

[185] For the 1979 Memorandum of Understanding and the 1990 Agreement between Malaysia and Thailand, see *supra* note 19.

established the Ministerial Council and Joint Authority to regulate petroleum exploration and exploitation in Area *A* of the zone of cooperation.[186] These joint authorities have similar powers and functions; namely, responsibility for hydrocarbon exploration and exploitation in the corresponding joint development zones.[187] To exercise these powers and perform their functions, both have also been given legal personality,[188] which means, inter alia, that they may enter into contractual arrangements with prospective concessionaires.[189] The agreements stipulate that these contracts will follow the production-sharing model of petroleum exploration and exploitation.[190]

The more recent Guinea-Bissau–Senegal Agreement of 1993 and its 1995 Protocol[191] constitute further evidence of the continuing popularity of this joint development model, despite the additional administrative burden its institutions impose on the parties. The 1995 Protocol established an international (joint) Management and Cooperation Agency for Maritime Spaces,[192] initially charged by the Agreement[193] with the express purpose of supervising joint exploration and exploitation activities within the designated Joint Exploitation Zone in accordance with proportions agreed upon in relation to the living (50:50) and nonliving (85:15 in favor of Senegal) continental shelf resources.[194] Apart from the rational exploitation of these resources, the agency is responsible for environmental protection in the designated Joint Exploitation Zone.[195]

This survey of bilateral state practice indicates, as a preliminary conclusion, that a rule of customary international law requiring cooperation specifically with a view toward joint development or transboundary unitization of a common hydrocarbon deposit has not yet crystallized. While the above examples of the three models show that interested states have a variety of choices, they do not demonstrate acceptance of the joint development solution per se as required by international law. The essential element of *opinio juris* remains indiscernible. Its absence, however, does not necessarily indicate a legal void on this issue. Indeed, it is arguable that there is a general principle of cooperation enjoining joint development as an effective alternative to legal stalemate, even if its normative content cannot be determined.

Consideration of whether joint development is obligatory must begin by recalling the *process* for rendering an obligation or duty imperative under customary international law.[196] As traditionally formulated, this process relies on the presence of settled state practice, coupled with the so-called psychological or subjective element (*opinio juris sive necessitatis*)

[186] Treaty between Australia and Indonesia, *supra* note 80, Arts. 5 & 7, respectively.

[187] Article 7(1) of the 1990 Malaysia-Thailand Agreement, *supra* note 19, and Article 3(1) of the Australia-Indonesia Treaty, *supra* note 80, respectively.

[188] Article 1(1) of the 1990 Malaysia-Thailand Agreement, *supra* note 19, and Article 7(2) of the Australia-Indonesia Treaty, *supra* note 80, respectively.

[189] Article 7(2)(e) of the 1990 Malaysia-Thailand Agreement, *supra* note 19, and Article 3(2) of the Australia-Indonesia Treaty, *supra* note 80, respectively.

[190] Article 8 of the 1990 Malaysia-Thailand Agreement, *supra* note 19, and Articles 3(1), (2) & 8, and Annexes B & C of the Australia-Indonesia Treaty, *supra* note 80, respectively. In production-sharing contracts, ownership of the resources remains vested in the host country or its national oil company and the contractor normally acquires title at an agreed export or delivery point. On the other hand, a concession is usually a large, defined geographical area as to which a state grants exclusive rights to explore for and exploit petroleum resources to a private (usually foreign) oil company. *See also* Kamal Hossain, *Choice of Petroleum Development Regime in Joint Development of Offshore Oil and Gas, in* 2 FOX ET AL., *supra* note 8, at 72.

[191] Management and Co-operation Agreement between Senegal and Guinea-Bissau, and Protocol to the Agreement, *supra* note 139.

[192] Renamed and launched in Bissau during a visit by the Senegalese President on February 14, 1996.

[193] Agreement between Senegal and Guinea-Bissau, *supra* note 139, Art. 4.

[194] *Id.*, Art. 2.

[195] Protocol to Senegal–Guinea-Bissau Agreement, *supra* note 139, Art. 23.

[196] Or, as Mendelson puts it more broadly, "we seek to identify the types of procedure which, if carried out by authorized actors, create law for members of the society in question." Maurice Mendelson, *The Subjective Element in Customary International Law*, 1995 BRIT. Y.B. INT'L L. 177, 178.

by which states accept that such practice is obligatory on their part. As for the first of these two elements, evidence of state practice need not be universal, provided the examples adduced convey a sense of consistency. Indeed, even if practice is not widespread or general, it may still give rise to a local or regional custom.[197] Thus, although customary international law is usually defined as constant and uniform state practice accepted as law, the degree of consistency required may clearly vary according to the subject matter of the rule in question.[198] Rigorous conformity is not demanded for the establishment of a rule of customary international law. State practice should be generally consistent with the given rule and instances of inconsistent practice deemed a breach of that rule, not an indication of the recognition of a new rule.[199]

Moreover, the practice of so-called specially affected states contributes significantly to the formation of any rule of customary international law. The Judgment in the *North Sea Continental Shelf* cases, for example, underlined the importance of the practice of the "specially affected" coastal states with continental shelves to the formation of customary international rules on delimitation of the continental shelf.[200] In this context, state practice on common deposits assumes greater significance for our purposes. Thus, while the ratio of joint development agreements to all types of maritime delimitation agreements is relatively low (around 1:10, according to Judge Anderson),[201] a key factor is missing from this calculation. This is how often common deposits had been detected when the agreements were concluded. It is the ratio of joint development agreements to the occurrence of such deposits that matters. This ratio is presumably higher and therefore supports the conclusion that there is consistent practice when common deposits are part of the picture.

Nevertheless, even this numerical basis for the presumption of a customary obligation enjoining joint development falls short when it comes to showing the existence of *opinio juris*.[202] The problem is to identify a threshold beyond which an international customary rule may be inferred from the behavior of states acting in a consistent manner. As Brownlie notes, "The essential problem is surely one of proof, and especially the incidence of the burden of proof."[203] Arguably, the ICJ has not yet established an adequate standard of proof whose attainment would ensure that a presumption of custom can be made with a high degree of certainty.[204] In certain cases, the Court has proved willing to infer the existence of *opinio juris* on the basis of relatively sparse examples of state practice.[205] In other cases, it

[197] As unsuccessfully argued by Colombia in the Asylum case (Colom./Peru), Judgment, 1950 ICJ REP. 266, 276–77 (Nov. 20), where the Court held that a "general practice accepted as law" could occur at a regional or local level between a few states or just two states in their relations inter se. Such a local custom was found to exist between Portugal and India in Right of Passage over Indian Territory (Port. v. India), Judgment, 1960 ICJ REP. 6, 39–40 (Apr. 12).

[198] *See* Fisheries case (UK v. Nor.), Judgment, 1951 ICJ REP. 116 (Dec. 18).

[199] Military and Paramilitary Activities in and against Nicaragua (Nicar. v. U.S.), Merits, 1986 ICJ REP. 14, 86, para. 186 (June 27) [hereinafter *Nicaragua* case].

[200] North Sea Cases, 1969 ICJ REP. at 43, para. 74.

[201] Anderson, *supra* note 95, at 474 (citing *Introduction* to PEACEFUL MANAGEMENT, *supra* note 17, at xvi).

[202] Compare the view of Mendelson, *supra* note 196, at 204, that in "standard" cases involving the application of a purported rule of customary international law, it is unnecessary to prove the existence of *opinio juris*. In this writer's view, however, the specific situation described here would be included in the category of cases where the conduct in question is ambiguous as to its legal import and would therefore fall outside the scope of Mendelson's standard case.

[203] BROWNLIE, *supra* note 23, at 7.

[204] Mendelson, *supra* note 196, at 180, notes that the International Court has given little guidance on the issue and, moreover, betrays a lack of consistency in its own practice, frequently coming to its conclusions without discussion of either the material (state practice) or the subjective (*opinio juris*) elements of customary international law.

[205] Notably, in the *Nicaragua* case, 1986 ICJ REP. at 99–100, para. 188, and 106, para. 202, respectively, when the Court presumed that *opinio juris* regarding the principles relating to the nonuse of force and nonintervention under customary international law pertained to relations between the parties rather than subject it to a strict burden of proof. *See also* Mendelson, *supra* note 196, at 204–05. The Court's reliance on *opinio juris* to circumvent and thus marginalize a history of state practice contrary to the articulation of a possible customary rule of nonintervention is also noted by BYERS, *supra* note 69, at 133.

has applied a more stringent approach, requiring that actual evidence of the acceptance of the legality of the rule be discernible in the supporting state practice. This evidentiary requirement was clearly stated in the *Lotus* case,[206] where the Permanent Court held that accumulated state practice did not by itself constitute evidence of the acceptance of the supposed rule as binding customary international law.[207]

A more relevant example of the high standard of proof required to infer a binding customary rule can be found in the ICJ's treatment of the alleged equidistance rule in the *North Sea Continental Shelf* cases. The ICJ held that there was a customary rule requiring states with adjacent coastlines to negotiate a maritime boundary agreement in good faith, applying so-called equitable principles. However, the Court could not discern acceptance of a further "positive" duty to apply the more specific equidistance rule.[208] This decision was arrived at notwithstanding examples of bilateral maritime boundary delimitation agreements applying the equidistance principle that had been submitted by Denmark and the Netherlands to support their argument that this principle was established customary international law.[209] These cases are therefore analogous to our inquiry on joint development; namely, is there also a rule of customary international law "positively" requiring joint development on the equivalent basis of an accumulated body of convergent state practice? Here, too, the answer is in the negative. In both instances, state practice alone is insufficient, or too "ambiguous,"[210] to infer the existence of a rule of customary international law.

This negative finding is at least partly due to the *nature* of the alleged customary obligation. A distinction can be drawn between customary rules providing "rights" and those imposing "obligations" or "duties" on states, with a higher burden of proof obtaining in the latter instance.[211] Positive obligations, which require a state to act in a certain prescribed manner, must be performed with greater consistency to be confirmed as a customary rule. Conversely, a negative or passive obligation, which enjoins a state to refrain from certain actions, arguably requires less consistency to become established.[212] In addition, a positive rule of customary international law entails, as a corollary, that inconsistent state conduct breaches that rule.[213]

If a similar perspective is applied to a common deposit, an alleged customary rule requiring joint development would fall within the category of rules that require a prescribed set of actions to be undertaken. As such, it would require a higher standard of proof for the requisite *opinio juris* to be inferred. The need to discharge this higher burden of proof arguably outweighs the extensive state practice held up as evidence of such a rule. This is because the formation of custom requires states not merely to act in accordance with the

[206] S.S. Lotus (Fr. v. Turk.), 1927 PCIJ (ser. A) No. 10.

[207] As regards the practice of states to abstain from exercising their criminal jurisdiction within the high seas over a crime committed aboard a foreign-flagged vessel, the Court held that "only if such abstention were based on their being conscious of having a duty to abstain would it be possible to speak of an international custom." *Id.* at 27.

[208] North Sea Cases, 1969 ICJ REP. at 44, para. 77. As the Court noted:

> [E]ven if these instances of action by non-parties to the Convention were much more numerous than they in fact are, they would not, even in the aggregate, suffice in themselves to constitute the *opinio juris*;—for, in order to achieve this result, two conditions must be fulfilled. Not only must the acts concerned amount to settled practice, but they must also be such, or be carried out in such a way, as to be evidence of a belief that this practice is rendered obligatory by the existence of a rule of law requiring it. The need for such a belief, i.e., the existence of a subjective element, is implicit in the very notion of the *opinio juris sive necessitatis*. . . . The frequency, or even habitual character of the acts is not in itself enough.

[209] *Id.* at 43, para. 75.

[210] Mendelson, *supra* note 196, at 200. *See also* Townsend-Gault & Stormont, *supra* note 17, at 58.

[211] *See* I. C. MacGibbon, *Customary International Law and Acquiescence*, 1957 BRIT. Y.B. INT'L L. 115, esp. 129–30.

[212] *See* MARTIN DIXON, TEXTBOOK ON INTERNATIONAL LAW 28 (3d ed. 1996).

[213] *Nicaragua* case, 1986 ICJ REP. at 98, para. 186. *See also* MIYOSHI, OIL AND GAS, *supra* note 8, at 4; Miyoshi, *Basic Concept, supra* note 8, at 10.

alleged rule, but also to emphasize by word or deed that they consider these actions incumbent on them in conforming to the alleged rule. Since the case of joint development requires greater consistency to confirm a customary rule, it must be concluded that a specific obligation requiring interested states to cooperate in the form of joint development cannot be derived from the present evidence. State practice on joint development of common deposits simply evinces no norm-creating behavior, despite its increasing frequency and apparent consistency.

On a related issue, has a regionally applicable rule of customary international law possibly been established that enjoins joint development by the interested states with regard to certain semienclosed seas? The regions where state practice on joint development prevails are the North Sea, the Persian Gulf, the East China Sea, the South China Sea (incorporating the Gulf of Thailand and the Timor Sea) and latterly the Caribbean Sea, as well as eastern and southern parts of the Atlantic Ocean. Even allowing for the fact that international law does not attach any value to the notion of individual precedent in terms of binding a state's future actions on the basis of previous bilateral state practice, a presumption in favor of joint development may arguably apply to the states concerned. At the heart of this argument is an estimation of the explicit, or at least implicit, acceptance by the states involved of the requirement to cooperate with a view toward joint development. Such state practice is accorded special weight in assessing the legal status of an alleged customary rule.[214] Therefore, while a specific obligation of joint development cannot be inferred to apply generally, the states in the North Sea, Persian Gulf and Southeast Asian regions, which are the vanguard of practice in joint development agreements, may prove to be an exception.

Particularly in areas with the most instances of state practice, it is arguable that a regional rule of customary international law has evolved that requires joint development to resolve the problem of a common deposit. How far states in these regions perceive themselves as legally enjoined to apply this solution is the ultimate test of such a rule. It should be noted that, when a regionally applicable rule was alleged in the *Asylum* case, the ICJ placed a fairly high burden of proof on the party that wished to rely on it.[215] A similar burden of proof would almost certainly be required of any state claiming a presumed rule in favor of joint development of common deposits in the North Sea, the Persian Gulf, Southeast Asia and the other regions mentioned.

These regional examples also highlight the *sui generis* nature of each joint development arrangement, which in turn reflects the functional purpose of such agreements. Every joint development scheme is adjusted to serve the physical, economic and political circumstances surrounding it.[216] Thus, while some kind of joint development is usually the most progressive choice among the cooperative options available to interested states with respect to a common deposit, this choice "should not be used as a convenient panacea for complex offshore jurisdictional disputes [because a] workable joint development arrangement requires a high degree of co-operation at all levels of bilateral international relationship."[217] International law still does not require a comparable degree of cooperation by states, despite the growing numbers and wider geographical scope of joint development arrangements all over the world.

[214] *See* North Sea Cases, 1969 ICJ REP. at 43, para. 74.

[215] "The Party which relies on a [regional or local] custom of this kind must prove that this custom is established in such a manner that it has become binding on the other Party." Asylum Case (Colom./Peru), Judgment, 1950 ICJ REP. 266, 276 (Nov. 20).

[216] *See* Townsend-Gault, *supra* note 8, at 282.

[217] *Id.* at 283.

The Nature and Extent of the Principle of Cooperation

An extensive body of authority can now be cited in support of a general obligation to cooperate in the exploitation of common or shared natural resources.[218] Whether this obligation specifically extends to requiring the joint development of a common deposit continues to be debated. As a way of resolving the legal problems raised by such deposits, it has been assumed that the states concerned possess joint property rights and vested interests in them, which leads to the conclusion that there is a procedural rule requiring cooperation in seeking an agreement on their apportionment.[219] This procedural rule is proved at least in part by the extensive and virtually uniform inclusion of mineral deposit clauses in the delimitation agreements of most interested states that mandate cooperation in developing common deposits of liquid minerals.[220] It has arguably attained the status of customary international law.[221]

The existence of this procedural rule, however, does not clarify the substance of the rights and duties to be included in the agreement. In that regard, a doctrine of correlative rights has been proposed, based on the provisions of the municipal law of oil-producing nations and the principles of international law relating to shared natural resources,[222] as well as such principles and rules as may be derived from analogous provisions of the LOS Convention, international case law and bilateral state practice on common deposits. The international legal applicability of these substantive principles and rules is said to stem from their status as "general principles of law recognized by civilized nations,"[223] leading to the conclusion that cooperation aimed at some form of joint development of common deposits is ordained by international law.[224] However, it would be a mistake to construe the more stringent requirement of joint development as an inevitable consequence of the procedural rule requiring cooperation. While this rule obliges the parties to negotiate in good faith,[225] it does not necessarily imply a duty to reach a specific type of agreement.[226]

The geographical scope of the alleged substantive rule concerning joint development has also been questioned, as the evidence of an evolving rule of customary international law is based mainly on the practice of oil-producing states in the North Sea and the Persian Gulf.[227] Thus, "what might be reasonable and obligatory in one part of the world might not necessarily be considered so in other parts with different conceptions of law."[228] Yet the sheer number and geographical variety of joint development and transboundary unitization agreements concluded to date appear to negate this assertion. These agreements suggest

[218] See, e.g., the separate opinion of Judge Jessup in the North Sea Cases, 1969 ICJ REP. at 82, where he notes that the principle of international cooperation is well established under customary international law.

[219] *See* Onorato, *supra* note 30, at 327.

[220] The inclusion of such clauses has become standard practice in European maritime delimitation agreements. The practice of oil-producing states in the Persian Gulf and Southeast Asia is even more significant. Nearly every delimitation agreement concluded since 1969 in these regions provides for cooperation regarding common deposits. *See also* note 11 *supra*.

[221] *See* Lagoni, *supra* note 9, at 235. This observation is echoed by Reid, *supra* note 37, at 214.

[222] *See* Onorato, *supra* note 30, at 330.

[223] *See id.* at 330–31. These general principles are acknowledged sources of international law and are applied by the ICJ under Article 38(1)(c) of its Statute, especially in areas where international law is not well established.

[224] William T. Onorato, *Joint Development of Sea-bed Hydrocarbon Resources: An Overview of Precedents in the North Sea*, 6 ENERGY 1311, 1312 (1981).

[225] *See* Lagoni, *supra* note 9, at 235 (citing well-established precedents such as the Tacna Arica arbitration, 19 AJIL 393, 398 (1925); Railway Traffic between Lithuania and Poland, 1931 PCIJ (ser. A/B) No. 42, at 108, 116; Lac Lanoux, 13 R.I.A.A. 281, 285 (1957); and North Sea Cases, 1969 ICJ REP. at 46, para. 86).

[226] *Id.* at 238 (citing Railway Traffic between Lithuania and Poland, 1931 PCIJ (ser. A/B) No. 42, at 116; and North Sea Cases, 1969 ICJ REP. at 48).

[227] *See* Miyoshi, *Basic Concept*, *supra* note 8, at 7.

[228] *Id.* at 9.

that what had previously been state practice only in certain regions is now evidenced in many others. Indeed, the joint development trend is gaining ground in actual practice and can be observed in various other parts of the world.[229] In the South China Sea and the wider Asian Pacific region in particular, the rising number of such agreements[230] supports the argument that several states have grasped the practical benefits of setting aside disputes over maritime delimitation in favor of mutually beneficial exploitation of resources. Examples in the North Sea (Markham Field, 1992) and the Persian Gulf (Yemen, 1988) regions, as well as more recent agreements on the Caribbean (Colombia-Jamaica, 1993), eastern Atlantic (Guinea-Bissau–Senegal, 1993/1995), and southern Atlantic (Argentina–United Kingdom, 1995) regions, also attest to increasing state practice in this field.[231]

The question remains whether this state practice constitutes a general recognition that an international legal obligation is involved, fulfilling the second element in the formation of a customary rule, i.e., *opinio juris sive necessitatis*.[232] States have apparently not applied the rule out of a perception of its legal necessity;[233] for example, the preambles to the Japan–Republic of Korea Agreement of 1974 and the Malaysia-Thailand Agreements of 1979–1990 show that the proposed joint development was arrived at as a practical solution in both states' best interests and with a view to maintaining friendly relations. A customary rule requiring joint development would compel states with interests in a common deposit to cooperate, even if they opposed joint development,[234] and failure to cooperate would constitute a violation of international law.[235] In fact, the true extent of the cooperative rule on joint development is uncertain and allows for several equally viable alternatives.

Thus, the case under established rules of customary international law for cooperation with a view toward joint development does not extend beyond that of a logical prescription of general principles of law accepted by a majority of the interested states and applied under their domestic law. It is doubtful that such tacit acceptance of these general principles can be held to constitute a customary rule applicable to all states in similar situations. The arguments noted above provide the legal basis for a procedural requirement to cooperate should interested states decide to begin negotiations on a common deposit, and transboundary unitization and joint development are among several possible legal outcomes. However, this requirement alone cannot be used to bring pressure to bear on a state, in the form of international legal sanctions, if it decides to remain aloof from the idea of joint development as its preferred outcome.

Reid suggests that the exhortation in Article 83(3) of the LOS Convention for states "to enter into provisional arrangements of a practical nature" represents a further codification of the evolving customary international law based on recent state practice,[236] but this writer finds it to be a purely procedural requirement that must be distinguished from the substantive obligation that a customary rule requiring cooperation directed toward joint development or transboundary unitization would entail. Indeed, his succinct conclusion is more to the point:

[229] *See* Willy Østreng, *Reaching Agreement on International Exploitation of Ocean Mineral Resources*, 10 ENERGY 555 (1985).

[230] Beginning with the 1974 Japan–South Korea Joint Development Agreement, *supra* note 20; and followed by the 1979 Memorandum of Understanding between Malaysia and Thailand, in conjunction with the 1990 Agreement on the Constitution of the Malaysia-Thailand Joint Authority, *supra* note 19; the 1989 Zone of Cooperation Treaty between Indonesia and Australia, *supra* note 80; and, more recently, the 1992 Malaysia-Vietnam Memorandum of Understanding, *supra* note 80.

[231] See "Bilateral State Practice in Joint Development," *supra* p. 787, for brief descriptions of all these agreements.

[232] As reflected in Article 38(1)(b) of the ICJ Statute. *See* North Sea Cases, 1969 ICJ REP. at 43, para. 74. Both Lagoni, *supra* note 9, at 233; and Miyoshi, *Basic Concept, supra* note 8, at 10, consider this question.

[233] *See* Miyoshi, *Basic Concept, supra* note 8, at 10.

[234] *See id.*

[235] *See id.* Miyoshi reiterated this point more recently in MIYOSHI, OIL AND GAS, *supra* note 8, at 4.

[236] Reid, *supra* note 37, at 215.

> [T]he current practice of customary international law and the relevant multilateral treaties can do no more than provide a framework for the parties to seabed boundary disputes to seek a negotiated solution on a bilateral basis which is more likely to be dictated by political considerations than strictly international legal criteria.[237]

On the other hand, the initial procedural requirement to cooperate in seeking some form of agreement, although not necessarily a joint development agreement, is now more obligatory in character rather than merely an option. Indeed, states bordering on semienclosed seas such as the Persian Gulf, the North Sea and the South China Sea may soon regard such cooperation as obligatory. This procedural obligation also requires states to seek agreement in good faith by exchanging information and consulting other interested states about common deposits.[238] Indeed, the very nature of the deposit makes these measures obligatory so that the states concerned can protect their own rights and will not violate those of their neighbors.[239] These procedural rules governing common deposits can therefore be regarded as specific aspects of a more general rule of customary international law requiring cooperation with respect to all kinds of shared natural resources.[240] When it comes to a fluid or moving shared natural resource, such as petroleum, natural gas, fish and marine mammals, the obligation to inform and consult other interested states as part of a general rule requiring cooperation is obvious.[241]

Apart from this procedural obligation to negotiate in good faith (i.e., "in a spirit of understanding and co-operation") to seek agreement on provisional arrangements of a practical nature for the exploitation of a common deposit, international law also imposes an obligation of mutual restraint on the interested states concerned. The nature and extent of this obligation are examined below.

V. THE OBLIGATION OF MUTUAL RESTRAINT

That states interested in a common deposit must exercise mutual restraint has received much doctrinal support.[242] It is arguably embodied in Article 83(3) of the LOS Convention, which provides that the states concerned shall make every effort not to jeopardize or hamper the reaching of the final agreement. This provision has been interpreted to mean that states are obliged to refrain from unilateral action when it risks depriving other states of the gains they might realize by exercising their sovereign right of exploitation.[243] This interpretation is qualified by the statement that only unilateral actions not amounting to the irreparable prejudice of other states' rights would be allowed.[244] This opinion is based on the *Aegean Sea Continental Shelf* case,[245] where the ICJ held that exploration activities that did

[237] *Id.* at 215–16.

[238] *See* Lagoni, *supra* note 16, at 355. *See also* LOS Convention, *supra* note 1, Art. 300.

[239] *See* 1998 ILA Report, *supra* note 8, at 29, para. 40. The latter part of Article 300 of the LOS Convention also cautions against states' exercising their rights in a manner that would constitute an abuse of these rights.

[240] *See id.* See also the separate opinion of Judge Jessup in North Sea Cases, 1969 ICJ REP. at 83.

[241] *See* 1 FOX ET AL., *supra* note 8, at 38.

[242] *See* Onorato, *supra* note 30, at 327; Lagoni, *supra* note 16, at 362; and Miyoshi, *Basic Concept, supra* note 8, at 10. As Churchill, *supra* note 38, at 57, also notes, "there is probably a rule of international law which prohibits States from exploiting seabed resources in disputed areas." Furthermore, Churchill and Ulfstein provide five examples of state practice as evidence of this rule of customary international law. *See* ROBIN CHURCHILL & GEIR ULFSTEIN, MARINE MANAGEMENT IN DISPUTED AREAS: THE CASE OF THE BARENTS SEA 87 (1992).

[243] *See* Miyoshi, *Basic Concept, supra* note 8, at 10–11; *see also* Lagoni, *supra* note 16, at 366.

[244] *See* Miyoshi, *Basic Concept, supra* note 8, at 10–11; *see also* Lagoni, *supra* note 16, at 366 (quoting the Aegean Sea Continental Shelf case, *infra* note 245, 1976 ICJ REP. at 11, para. 32, where the Court invoked Article 41(1) of its Statute, which provides that it has the power to indicate provisional measures to preserve the rights of either party, when "the circumstances of the case disclose the risk of an irreparable prejudice to rights [of either party] in issue in the proceedings").

[245] Aegean Sea Continental Shelf (Greece v. Turk.), Interim Protection, 1976 ICJ REP. 3 (Order of Sept. 11).

not establish installations, or amount to actual appropriation or other use of the natural resources in question, did not justify issuing an interim measure of protection.[246] The Court thus distinguished between temporary or transitory exploration activities and permanent exploration efforts employing stationary means. This latter activity is prohibited and possibly would have prompted an interim protective measure by the Court.[247]

This interpretation, however, may constitute too stringent a restriction on an initiating state's sovereign rights over its continental shelf, whether delimited or not. Certainly, it should be balanced against the exclusive nature of the coastal state's drilling rights in the continental shelf.[248] In light of the *Aegean Sea* decision, such operations as are allowed possibly extend only to exploration and not exploitation. Since even unilateral exploratory activities of an established, as opposed to temporary, nature may justify the award of an interim measure of protection, the implication of the *Aegean Sea* decision is that if exploitation had in fact taken place, the interim protective measure requested by Greece would have been awarded. Thus, in the absence of a permissive treaty provision, no state may exploit, as opposed to explore, a common deposit before negotiating the matter with the neighboring state or the state concerned.[249] Arguably, such an obligation is inescapable, considering that any major drilling or other type of prospecting activity that affects the common deposit in a delimited area or an area of overlapping claims touches on the interests of the other state or states involved and thus creates legal problems of a bilateral or multilateral nature.[250] States themselves would seem to be under no illusion about the illegality of such unilateral actions.[251]

This conclusion is affirmed by the knowledge that "[b]y definition, unilateral action precludes operating according to standards of good recognized oilfield practice."[252] Activities that do not meet such standards may be alleged to be prejudicial to the rights of other states, and thus expose the initiating state to the threat of an international claim. Consequently, the states concerned are compelled by more than merely practical reasons to cooperate as regards a common deposit.[253] Furthermore, a state will not be able to exploit that part of the deposit on its side of the line, or within its overlapping claim, for fear of causing irrevocable damage to the interests of the other state(s) because the unilateral exploitation of a common deposit directly changes conditions in the whole deposit.[254] Such unilateral exploitation may be actionable under international law, either as a violation of the territorial sovereignty or integrity of the affected state,[255] or as a violation of that state's ostensibly exclusive sovereign right of exploitation over the continental shelf.[256] The un-

[246] *See* Miyoshi, *Basic Concept*, *supra* note 8, at 10–11; and Lagoni, *supra* note 16, at 366 (citing Aegean Sea Continental Shelf, 1976 ICJ REP. at 10, para. 30).

[247] Lagoni, *supra* note 16, at 366.

[248] LOS Convention, *supra* note 1, Art. 81.

[249] *See* Lagoni, *supra* note 9, at 235.

[250] *See* 1988 ILA Report, *supra* note 8, at 38, para. 52.

[251] Bundy, *supra* note 50, at 27, for example, recounts many instances in the Mediterranean (Libya/Malta and Libya/Tunisia), the Middle East and the South China Sea where unilateral drilling, even for exploratory purposes, has been the subject of strenuous protest.

[252] Gault, *supra* note 53, at 302. See *id.* for examples of good oil-field practice. *See also, e.g.*, the Argentina-UK Joint Declaration, *supra* note 139, para. 2 (providing for the exploration and exploitation of hydrocarbons within the areas of special cooperation in the southwest Atlantic to be undertaken in accordance with good oil-field practice, drawing from the two Governments' experiences in the southwest Atlantic and the North Sea, where transboundary unitization agreements are well established).

[253] Compare Lagoni, *supra* note 9, at 243, who suggests that states are compelled by only practical, as opposed to legal, reasons to cooperate.

[254] *Id.* at 242–43.

[255] Under the principles laid down in the Trail Smelter arbitration (U.S. v. Can.), 3 R.I.A.A. 1905 (1941); and the Corfu Channel case (UK v. Alb.) (Merits), 1949 ICJ REP. 4, 22 (Apr. 9).

[256] *See* 1 FOX ET AL., *supra* note 8, at 33.

consented, unilateral exploitation of a common deposit has previously been seen as unlawful.[257] This was held to mean that exploitation could proceed only by mutual agreement.[258] This view implies that a joint development agreement is the preferred alternative, as arguably being the best method of ensuring adequate legal protection of interested states' correlative rights in the common deposit. Each interested state would be able to exercise its sovereign rights to the fullest extent possible without detracting from, or otherwise compromising, the equally valid sovereign rights of other states interested in the deposit.

If we pursue this line of argument to its logical conclusion, however, we are faced with yet another problem: what happens if negotiations on an agreement break down? Are a recalcitrant state's sovereign rights absolute so that it may veto unilateral exploratory efforts, as well as joint development proposals, by the initiating state?[259] Lagoni's answer to this question, to the effect that states have no right of veto against another state's operations, seems to be correct with regard to exploration, but not exploitation, of the deposit;[260] the fluidity of the resource continues to complicate the issue. Even if a state is free to utilize a resource that lies on its side of an agreed or putative dividing line, its extraction could easily drain the other states' share.[261] Once again, where the unilateral exploitation of a common deposit will inevitably affect the rights of other interested states, it is prohibited under international law.

On the other hand, a recalcitrant state cannot veto unilateral exploration activities by the initiating state, unless these activities can clearly be shown to be prejudicial to its rights. Moreover, its potential veto over unilateral exploitation does not allow a state to forgo its continuing duty to negotiate in good faith toward reaching an equitable resolution of the dispute,[262] whether or not it ultimately involves joint development.[263] The above view is further supported by analogy to the coastal state's rights over resource deposits lying across the limits of national jurisdiction into the (deep seabed) Area. The prior consent of the coastal state concerned is required if activities in the Area may result in the exploitation of resources lying within national jurisdiction.[264] In principle, there is no reason why the requirement of prior consent should not be applied by analogy to a similar factual situation regarding the jurisdiction of two or more legitimately interested states.[265]

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?[266] This question is especially pertinent to areas of overlapping claims 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. Therefore, in that situation it runs the risk of infringing the exclusive rights of exploration and exploita-

[257] *See* Onorato, *supra* note 30, at 328.

[258] *See id.* at 329–30.

[259] *See* MIYOSHI, OIL AND GAS, *supra* note 8, at 5; *see also* Miyoshi, *Basic Concept, supra* note 8, at 14.

[260] Lagoni, *supra* note 9, at 238 n.115, 239.

[261] *See* Miyoshi, *Basic Concept, supra* note 8, at 13–14; *see also* Lagoni, *supra* note 9, at 217; and Gault, *supra* note 53, at 302–03.

[262] In line with LOS Convention, *supra* note 1, Art. 83(1), on delimitation of the continental shelf.

[263] Either as a result of such delimitation negotiations, or as provisional arrangements pending a final delimitation agreement, provided for in Articles 74(3) and 83(3) of the LOS Convention, respectively.

[264] LOS Convention, *supra* note 1, Art. 142(2).

[265] Here it is pertinent to note that the prior consent requirement also accords with developments in public international law governing environmentally hazardous activities that may damage other states' interests, such as the transboundary movements of hazardous wastes, where the prior informed consent of both importing and transit states is necessary before shipments are permitted. *See* Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Mar. 22, 1989, Arts. 4, 6, 28 ILM 657 (1989). Article 7 provides that the prior informed consent requirement shall also apply to nonparties.

[266] *See* Miyoshi, *Basic Concept, supra* note 8, at 14.

tion of another state, as the Court acknowledged in the *Aegean Sea* case.[267] We can thus envisage a scenario in which the initiating state resorts to unilateral exploratory or even exploitative action on the ground that it is absolved of the obligation to refrain from doing so by the recalcitrant state's refusal to negotiate an agreement. Lagoni responds to this possibility by urging mutual restraint on the interested states as soon as the overlapping claims are discerned.[268] Since such an obligation would be independent of negotiations on either a provisional or a final agreement, it would also arise if one of the states refused to negotiate.[269] Therefore, mutual restraint arguably amounts to an effective veto against a state that initiates negotiations over a disputed area but is rebuffed. Progress toward any arrangement for exploiting the common deposit is stymied for all the interested states.

This stalemate may be averted in theory by the argument that a state refusing to negotiate in this manner thereby forfeits the ability to hold another state responsible for the violation of its sovereign rights.[270] However, the exclusivity of the recalcitrant state's sovereign rights remains a problem.[271] Miyoshi has therefore suggested that the obligation of mutual restraint should be coupled with the proactive requirement to negotiate provisional arrangements of a practical nature in Article 83(3) of the LOS Convention.[272] Lagoni concurs, finding that the obligations of cooperation and mutual restraint complement each other with respect to both delimited areas and those subject to overlapping claims. Thus, Article 83(3) provides another legal precept promoting international cooperation in such situations.[273]

Finally, another way to apportion a common deposit equitably would be to compensate the recalcitrant state in return for its acquiescence in the unilateral exploitation of the unitized deposit. In this manner, the sovereign rights of the states that are disinclined to negotiate on either delimitation (coupled with a transboundary unitization clause) or joint development would be accounted for despite their ostensible encroachment by the initiating state(s).

VI. CONCLUSIONS

In view of the preceding discussion, can it be concluded that there is now a rule of customary international law requiring states to negotiate joint development agreements? Analogous conventional provisions in the international law of the sea, related UN General Assembly resolutions, international judicial opinion and relevant examples of bilateral state practice on this issue, as well as the writings of publicists, constitute the overall legal framework for consideration of this question. This body of authority provides strong support for the contention that states have a general obligation to cooperate in the exploitation of their shared natural resources.

This obligation has been applied by oil-producing states in their municipal legal systems and is recognized as a general principle of international law. This general principle has proved to be a useful guideline in the formulation of the applicable international law.[274] Indeed, the ICJ has observed that, in the absence of pertinent customary or conventional

[267] Aegean Sea Continental Shelf (Greece v. Turk.) (Interim Protection), 1976 ICJ REP. 3, 10, para. 30 (Order of Sept. 11).

[268] Lagoni, *supra* note 16, at 364.

[269] *Id.*

[270] *See* Miyoshi, *Basic Concept, supra* note 8, at 14 n.65 (citing an improvised memorandum contributed by Lagoni to the Third Workshop, *supra* note 51). This point is arguably made in furtherance of the principle of effectiveness under international law, by which states must be allowed to exercise their lawful rights effectively and without undue interference.

[271] *See* Miyoshi, *Basic Concept, supra* note 8, at 14.

[272] *Id.*

[273] Lagoni, *supra* note 16, at 367.

[274] *See* Onorato, *supra* note 30, at 331.

rules, direct reference should be made to the relevant general principles derived from municipal laws.[275] However, the preceding analysis and increasing state practice on joint development suggest that certain aspects of the general requirement to cooperate have transcended its status as a general principle and acquired the imperative of customary international law. As Brownlie presciently remarked:

> Whilst the general principles of international law do not provide much assistance in facing the problems of allocation of resources, the practical experience of States in resolving disputes has produced a not inconsiderable store of models of joint exploration and exploitation of natural resources. The fact that most of the régimes are the product of bilateral treaties in no way diminishes their utility and significance and there is a continuum consisting of the bilateral arrangements and the more ambitious multilateral structures, actual or envisaged.[276]

Specific aspects of the general principle requiring international cooperation can now be reformulated as two cardinal rules of customary international law applicable to a common deposit. These rules are, first, an obligation to cooperate in reaching agreement on the exploration and exploitation of these deposits (although not necessarily on their joint development); and second, in the absence of such an agreement, an obligation to exercise mutual restraint with respect to the unilateral exploitation of the resource. These two obligations set the scene and provide the legal bases for a more progressive approach to common deposits. Joint development itself, however, is not specifically required by international law and cannot prove effective without a determined exercise of political will by the governments involved.[277]

Although the precise formulation of the general rule of cooperation regarding a common deposit continues to be the subject of debate,[278] several distinct elements can be distilled from its general ambit. These elements can be divided into the following proscriptive and prescriptive duties.

First, the lack of an international rule of capture means that interested states are proscribed from unilaterally exploiting the deposit, including any part of the deposit that is on their side of an agreed or putative maritime boundary. Even unilateral prospecting or other exploration activity related to the deposit is subject to the prescriptive rules set out below regarding notification, consultation and negotiation with other interested states. Indeed, since permanent means of exploratory drilling can be construed as representing irreparable prejudice to the interests of other states, it cannot simply be concluded that exploration is permissible but exploitation prohibited.[279]

Second, to move from proscribed actions to the prescriptive elements of the general obligation: any interested state is obliged to notify, inform and consult the other interested states in good faith of its intentions with respect to a common deposit. This obligation is more established when a maritime boundary agreement has been concluded, especially one that includes a transboundary mineral deposit clause obliging the parties to take specified courses of action if a deposit is detected.[280] Nevertheless, the obligation also applies to deposits found in areas of overlapping continental shelf claims by virtue of the inherent

[275] *See id.* (citing Barcelona Traction, Light & Power Co. (Belg. v. Spain) (Second Phase), 1970 ICJ REP. 3, 33, para. 38, and esp. 37, para. 50 (Feb. 5)).

[276] Ian Brownlie, *Legal Status of Natural Resources in International Law (Some Aspects)*, 162 RECUEIL DES COURS 245, 289 (1979 I).

[277] *See* Reid, *supra* note 37, at 221.

[278] *See, e.g.*, Zhiguo Gao, *Legal Aspects of Joint Development in International Law*, *in* SUSTAINABLE DEVELOPMENT AND PRESERVATION OF THE OCEANS: THE CHALLENGES OF UNCLOS AND AGENDA 21, at 629, 642 (Mochtar Kusuma-Atmadja et al. eds., 1997).

[279] *See* Lagoni, *supra* note 16, at 366 (citing Aegean Sea Continental Shelf, 1976 ICJ REP. at 10–11, paras. 30–33).

[280] Significantly, certain transboundary deposit clauses provide for stricter or more specific resolution methods than others. *See* Ong, *supra* note 91, at 83–85.

nature of the sovereign rights of all states with a legal claim to such areas. The duty to inform or notify the other interested parties is triggered by the detection of a common deposit, and is to be followed by mutual consultations on the most effective or optimum way to exploit the resources concerned without damaging the legitimate interests of the other interested states. Further elaboration of this obligation may even require that these consultations be based on the principle of equitable sharing of the benefits of the exploitation.[281] The most progressive application of this principle would undoubtedly be in the form of a joint development arrangement.

Third, states must enter into negotiations in good faith with a view toward arriving at a suitable cooperative arrangement[282] for the exploitation of the resource that takes all the relevant states' interests into account. Again, these negotiations do not have to be directed toward joint development. According to Lagoni, the states concerned are not obliged to conclude such arrangements, merely to conduct negotiations on them.[283] However, since the method of exploitation of the common deposit must be agreed upon by the interested states, they must necessarily negotiate with a view toward reaching an agreement.[284]

This last prescriptive criterion returns the discussion to the most efficient means of exploiting a common petroleum deposit. Many of the agreements regarding such deposits provide for their transboundary unitization or joint development. It is certainly the most prescribed, preferred and approved course of action. Yet, while ample legal authority and many examples of bilateral state practice can be adduced in support of joint development, it is too specific a requirement to impose on all states finding themselves in similar circumstances. It may thus be concluded that the obligation to cooperate does not encompass a "positive" requirement for joint development of common deposits at present.

This conclusion does not rule out the possibility that the joint development alternative will be arrived at indirectly. Despite the lack of a prescriptive mandate for joint development, the corresponding proscriptive obligation of mutual restraint may make joint development the only viable option for resolving the problems raised by common deposits, short of resort to some form of conciliation or third-party adjudication. Even in cases of third-party settlement of such disputes, joint development has received judicial support and encouragement, if not quite judicial prescription.

The restrictive nature of the prohibition against unilateral action means that, without some form of legal requirement for cooperation with a view toward reaching an agreement, there remains the ominous prospect that one state will effectively veto another state's sovereign rights to exploit a common deposit, even the part of it that is on the other state's side of a delimited or putative boundary. Where the sovereign rights of each of the interested states are regarded as well-nigh indivisible because of the fluid nature of the resource, such a stalemate may be avoided by requiring a reluctant state to justify its refusal to consider the joint development option by providing adequate and appropriate reasons why it should not be adopted. This solution would shift the burden of proof in favor of a presumption of joint development and thus make it more difficult for a recalcitrant state to maintain an effective veto or stall the negotiations on cooperative arrangements for exploiting the deposit.

The presumption in favor of joint development can be applied whenever a shared common hydrocarbon deposit is detected, whether it lies across a boundary or in an area

[281] For example, Agreement establishing certain sea-bed boundaries in the area of the Timor and Arafura Seas, May 18, 1971, Austl.-Indon., Art. 7, LEGISLATION AND TREATIES, *supra* note 139, UN Doc. ST/LEG/SER.B/18, at 433, 10 ILM 830 (1971); and Supplementary Agreement, Oct. 9, 1972, Austl.-Indon., Art. 7, UN Doc. ST/LEG/SER.B/18, *supra*, at 441.

[282] Even if such an arrangement only involves the payment of adequate compensation for the right to exploit the deposit unilaterally.

[283] *See* Lagoni, *supra* note 16, at 367.

[284] *See* Onorato, *supra* note 30, at 330.

of overlapping continental shelf claims. It is especially appropriate in the latter case where the distance between the opposing coastlines is less than 400 nautical miles at every point. It is suggested here that in such a situation, the sovereign rights of the interested states can be effectively protected only by recourse to negotiations on a joint development regime that all of them can accept. The presumption in favor of joint development is particularly applicable to states whose interests are specifically affected by the alleged rule in this regard and whose practice accords with it. The ICJ has held that such state practice should be given special weight in assessing the legal status of an alleged customary rule.[285] Therefore, states in the North Sea, Persian Gulf and Southeast Asian regions, which stand at the forefront of state practice on joint development, may be subject to a regional rule of customary international law in this respect.

[285] North Sea Cases, 1969 ICJ REP. at 43, para. 74.