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Conflict Resolution in the Assignment of Area Entitlements for Seabed Mining†

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This article describes conditions creating a need for, and the procedures being implemented to achieve, resolution of conflicts over deep seabed areas sought for exclusive exploration entitlements. If and when deep seabed mining takes place, certain tangible advantages will accrue to nations or organizations that have obtained entitlements to exclusivity of activity within areas of the seabed. Development of legal assurances of exclusivity and security of work within a claimed area has been proceeding along two different tracks: (1) the 1982 Convention; and (2) a prospectively complementary but currently separate and potentially competing entitlement system based on domestic laws, multilateral arrangements, and private agreements. Because the areas sought by prospective seabed miners under both tracks overlap in varying degrees, attempts to resolve conflicts are a part of each track. Successful resolution in either track could facilitate progress in the other, and arrangements developed through efforts in the separate tracks could contribute eventually to a convergence of the two legal regulatory regimes.

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INTRODUCTION

If and when deep seabed mining occurs, whether under the legal authority of the United Nations Convention on the Law of the Sea¹ (1982 Convention) or an alternative multilateral understanding, certain tangible advantages will accrue to nations or organizations that have qualified as "pioneer investors" or "pre-enactment explorers" and obtained entitlements to exclusivity of activity within seabed areas. A number of large international companies, as well as several national governments, have invested altogether several hundred million dollars during the last decade² to develop the capability to find and recover metal-rich manganese nodules³ that litter the ocean floor. Until about 1980, investments were directed primarily toward technological research and development and exploration. Virtually all that spending has stopped, however and several major companies have either withdrawn from the adventure or declined to make further expenditures.⁴ Indeed, with few exceptions, the only major activity within the seabed mining consortia appears to be securing legal and regulatory advantages, and more specifically, acquiring assured access to preferred prospective mining sites.

International law is shaped not only by agreement, treaty, document, and decree, but also, and perhaps more fundamentally, by State practice. Firm practice, whether by State-owned or private enterprises, affects international law as it is adopted, tolerated, or specifically rejected by governments. The principal practice now under-

1. United Nations Convention on the Law of the Sea, U.N. Doc. A/CONF.62/122 (1982) [Hereinafter cited as 1982 Convention].

2. See *infra* text accompanying notes 71-108.

3. Manganese nodules are found on the deep seabeds of the major oceans and on the floors of other water bodies. Seabed areas of prime exploration interest are located between the Clarion and Clipperton fracture zones in the northeast equatorial Pacific. Manganese nodules recovered from these areas are typically composed of 25% manganese, 1.3% nickel, 1% copper, 0.2% cobalt, and many other elements. Haynes & Law, *Predicted Characteristics of Waste Materials from the Processing of Manganese Nodules*, IC 8904 BUREAU OF MINES INFORMATION CIRCULAR (1982).

4. International consensus on the legal regime established by the 1982 Convention has been delayed primarily by objections from the United States and other industrial nations to the seabed mining provisions of the treaty. Somewhat ironically, economic prospects for seabed mining seem to be crumbling at the same time. See General Accounting Office, *Uncertainties Surround Future of U.S. Ocean Mining* (1983); 33 BILLITON INTERNATIONAL NEWSLETTER 2 (1983); Farr, *Metal Demand Forecasting and Deep Sea Mining*, PROC. OF OCEANOLOGY INT'L (1982); Vanney, *L'Exploitation des Nodules Polymetaliques: Une Convergence de Difficultes*, 106 NOROIS 217-35 (1980); *Deep Seabed Mining: Where Do We Go From Here?*, 182 ENGINEERING & MINING J. 123-33 (1981); FLIPSE, AN ECONOMIC ANALYSIS OF A PIONEER DEEP OCEAN MINING VENTURE (1982); ANDREWS, FLIPSE, AND BROWN, THE ECONOMIC VIABILITY OF A FOUR-METAL PIONEER DEEP OCEAN MINING VENTURE (1983). Some of the information in this article is derived from an extensive series of in-depth interviews conducted by one of the authors with responsible officials from all the commercial consortia and from most parent companies. Assurances of confidentiality necessary for these interviews precludes direct attribution to individual sources in some instances.

way in the seabed mining arena is State and company maneuvering, both within and outside the terms of the 1982 Convention, for access to potential ocean mine sites. This article examines the framework and status of those maneuvers in greater detail.

In general, this article analyzes the conditions creating a need for the resolution of conflicts over areas of the deep seabed being sought for exclusive exploration entitlements, and the procedures being implemented to achieve that resolution. Because several prospective seabed mining States have declined to accept the 1982 Convention, two "tracks" toward establishing legal rules to govern seabed mining have evolved. This article describes the two tracks, beginning with the provisions for assignment of area entitlements under the 1982 Convention and moving to domestic laws and reciprocating States arrangements that may complement the Convention track or evolve into a "mini-treaty" alternative. The article also describes voluntary private negotiations between seabed mining consortia,⁵ and provides a detailed examination of the companies, State enterprises, and nations that are major actors in the conflict resolution process. Finally, this article discusses relationships between the two conflict resolution tracks, concentrating on tendencies toward divergence or convergence.

SEABED MINING REGULATION AND CONFLICT RESOLUTION

Conflict resolution, within the seabed mining context, refers to the elimination of geographically overlapping claims of seabed areas. Legal assurances of exclusivity and security to mine a claimed area have developed along two different tracks: (1) the 1982 Convention; and (2) a prospectively complementary but currently separate and potentially competing entitlement system based on domestic laws, multilateral arrangements for reciprocal recognition of entitlements under those laws, and private agreements to facilitate reciprocation. Because the areas sought by prospective seabed miners under both tracks overlap in varying degrees, attempts to resolve conflicts are a necessary part of each track.

5. Reference to Appendixes I and II may facilitate an understanding of the consortia agreements.

1982 Convention Track

Part XI of the 1982 Convention applies to the "Area," or that part of the seabed beyond the limits of national jurisdiction.⁶ The Area does not fall under any particular sovereignty. Therefore, under the Convention, the resources of the Area belong to the world; they are the "common heritage of mankind."⁷

The 1982 Convention creates an International Seabed Authority (ISA) with the power to regulate the exploration of Area resources.⁸ The "Enterprise", an arm of the ISA, may actually engage in seabed mining, and transport, process, and market recovered minerals.⁹ Companies or States that eventually mine the seabed under the 1982 Convention will be concerned with several important provisions, including preparatory investment in pioneer activities (PIP),¹⁰ production limitations,¹¹ transfer of technology,¹² financial payments,¹³ and diligence requirements.¹⁴ Of immediate importance will be staking claims to seabed areas for exploration activities and, perhaps later, for commercial exploitation. Because the most productive areas of the seabed are limited, substantially overlapping exploration area claims by seabed mining enterprises are not surprising. Conflict resolution of overlapping seabed claims has been a *sine qua non* in the allocation of seabed area claims through PIP.

Preparatory Investment in Pioneer Activities

Under the 1982 Convention, seabed miners, including the Enterprise, State parties, and State-sponsored consortia, must apply for a "plan of work" from the ISA for activities in the Area. A plan of work is a mining contract that confers upon a seabed miner "the exclusive right to explore for and exploit the specified categories of resources in the Area covered by the plan of work."¹⁵ Six months after the 1982 Convention enters into force, the ISA will consider proposed plans of work in the chronological order in which they have been filed. A plan of work in compliance with the 1982 Convention

6. 1982 Convention, *supra* note 1, at art. 1, para. 1.

7. *Id.* art. 136-37.

8. *Id.* art. 156-58.

9. *Id.* art. 170, para. 1. The Preparatory Commission (PrepCom) will prepare draft rules, regulations, and procedures necessary for the ISA to commence operations. In addition, PrepCom will facilitate the early entry into seabed mining and assure the effective operation of the Enterprise. United Nations Convention on the Law of the Sea, Final Act. U.N. Doc. A/CONF. 62123, Annex I, Resolution I, para. 5 (q), 8 (1982) [hereinafter cited as Final Act].

10. Final Act, *supra* note 9, Annex I, Resolution II.

11. 1982 Convention, *supra* note 1, art. 151.

12. *Id.* art. 144 and Annex III, art. 5.

13. *Id.* Annex III, art. 13.

14. *Id.* art. 151, para. 2(b), (c) and Annex III, art. 13.

15. *Id.* Annex III, art. 3, para 1, para. 4(c).

and ISA regulations must be approved, unless an overlap occurs between two or more exploration and exploitation areas. The ISA may not accept a proposed plan of work that overlaps a previously approved plan.¹⁶ A prospective seabed miner may submit a plan of work that covers only exploration or both exploration and exploitation.¹⁷ A miner with an approved plan covering exploration only and a satisfactory performance record, has "a preference and a priority among applicants for a plan of work covering exploitation of the same area and resources."¹⁸

The 1982 Convention encourages prospecting activities in the Area since the Convention may not enter into force for several years.¹⁹ Several potential seabed miners already have made substantial investments in seabed mining.²⁰ The Convention recognizes the value of these early prospecting efforts through "PIP", a plan to protect preparatory investment in pioneer activities.²¹ For investment protection, the Convention grants exclusive rights to "pioneer investors" to undertake "pioneer activities" within applied-for "pioneer areas."²² Pioneer investors are defined as State enterprises or mining consortia that by 1983 have spent at least \$30 million, with 10 percent going toward the location, survey, and evaluation of a mining area.²³ Pioneer activities are a type of advanced prospecting that in-

16. *Id.* Annex III, art. 6, para. 3(a). Nor may a proposed plan of work that overlaps a previously submitted plan not yet acted upon be approved.

17. *See id.* Annex III, art. 3, para. 4(c).

18. *Id.* Annex III, art. 10.

19. *Id.* Annex III, art. 2, para. 1(a). The Convention needs 60 State ratifications to enter into force.

20. *See supra* note 2.

21. Final Act, *supra* note 9, Annex I, Resolution II. PIP has been called a "grandfather provision" since it recognizes activities that have taken place prior to the Convention's effectiveness. *See infra* notes 71-97 and accompanying text.

22. Final Act, *supra* note 9, Annex I, Resolution II.

23. *Id.* Annex I, Resolution II, para. 1(a). Basically, PIP names States, such as France, India, Japan, the Soviet Union, and developing States that meet certain qualifications, as pioneer investors. PIP also specifies criteria by which other entities that have the nationality of the above States or of Belgium, Canada, West Germany, Italy, Japan, the Netherlands, the United Kingdom, or the United States qualify as pioneer investors.

Seabed mining consortia cannot become parties to the 1982 Convention. The consortia must be certified as pioneer investors by State signatories. A certifying State may apply for a pioneer area on behalf of a multinational consortium if at least one company is a national of that State, even if other companies in the consortium are nationals of non-signatory States. *Id.* The Soviet Union contested this provision before the United Nations Legal Counsel, claiming the provision was prejudicial to Soviet interests. The government argued that its national seabed mining enterprise could be certified only if the Soviet Union signed the Convention, whereas United States-based consortia could be certified without the United States' signature. The legal counsel found the provision was "political," not "legal," so that conference participants could decide whether to keep the provi-

volves exploration.

Each pioneer area registered with the Preparatory Commission (PrepCom)²⁴ under PIP must be large enough for two mining operations. The PrepCom eventually will allocate half of the mining area to the pioneer investor and the other half will be reserved for either the Enterprise or a developing State.²⁵ Six months after the 1982 Convention becomes effective, a pioneer investor must apply to the ISA with a plan of work for its pioneer area. The ISA must approve a plan that complies with the Convention and ISA regulations, and in the case of multinational consortia, that is submitted by parent-States that are all parties to the Convention.²⁶

A "start-up" problem exists under PIP with overlaps among pioneer areas. Pioneer areas that PrepCom assigns to pioneer investors have priority over all subsequent applications.²⁷ Since most pioneer investors will be designated as such at the same time, no chronological basis exists for determining application priorities for pioneer areas, or for subsequent exploration and exploitation areas under a plan of work. PIP specifically requires a certifying State to resolve those area overlaps that occur between its nationals before registering pioneer areas with PrepCom. PIP is nonspecific, however, as to pioneer area overlaps between prospective certifying States, except that those States "shall resolve their conflicts . . . by negotiations within a reasonable period."²⁸ If conflicts are not resolved, "the prospective certifying States shall arrange for the submission of all such claims to binding arbitration. . . ."²⁹

If conflicts eventually reach binding arbitration, an arbitral tribunal must consider the following "factors" in determining a priority

sion. Department of State, REPORT TO THE UNITED STATES DELEGATION TO THE ELEVENTH SESSION OF THE UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA 8 (Mar. 8 - Apr. 30, 1982).

24. See *supra* note 9.

25. Final Act, *supra* note 9, Annex I Resolution II, para. 3(a), (b).

26. *Id.* Annex I, Resolution II, para. 8(a), (c). To receive exclusive pioneer rights to an area, a commercial group need have only one member from a signatory State. To receive an approved plan of work after entry into force of the 1982 Convention, all members of the group must be from States that are parties to the Convention. See also *supra* note 23.

27. *Id.* Annex I, Resolution II, para. 9(a).

28. *Id.* Annex I, Resolution II, para. 5(c).

29. *Id.* PIP states that if conflicts between prospective certifying States have not been resolved by March 1, 1983, those States shall arrange for the submission of claims to binding arbitration by May 1, 1983, which arbitration must be completed by December 1, 1984. If good cause is shown, the arbitral tribunal can extend the arbitration period by one or more months. Prospective certifying States did not resolve conflicts by the March deadline. Except for the Soviet Union and India, prospective certifying States have argued that they cannot even register claims under PIP until PrepCom "begins to function." Since PrepCom has not yet begun functioning, the deadlines are irrelevant. The Soviet Union and India have resolved conflicts between themselves and have indicated their desire to register claims immediately. See *infra* notes 143-144.

among pioneer investor applicants: (1) "the continuity and extent of past activities relevant to each area in conflict and to the application area"; (2) the date on which the pioneer investor (or its predecessor or parent organization) began activities at sea in the application area; (3) the constant United States dollar cost of activities in the overlapped area and in the application area; and (4) the date when activities at sea were carried out and the quality of those activities.³⁰

Memorandum of Understanding to Facilitate PIP

PIP is silent about the form of conflict resolution between pioneer investors before the invocation of binding arbitration. To negotiate international agreements regarding the method of resolving overlaps within the PIP framework, Canada, as a prospective certifying State, chaired discussions in 1982 and 1983 directed at drafting a Memorandum of Understanding (MOU) among certifying States.³¹ Participation in the MOU effort initially included all seabed mining States, but eventually was restricted to prospective certifying States or pioneer investor States, thus excluding those that did not sign the 1982 Convention.³² MOU drafts were nonspecific, proposing to resolve conflicts by the exchange of pioneer area coordinates, identification of overlaps, and initiation of discussions. Once overlaps were identified, amendments to original claims causing new overlaps would not be allowed.³³ Efforts to adopt the MOU evaporated in 1983 due to disagreements and nonparticipation by several key States. The Soviet Union, for example, after early involvement in the MOU process, declined to participate further.³⁴ The resolution of pi-

30. Final act, *supra* note 9, Annex I, Resolution II, para. 5(d). This paragraph also specifies that a list of relevant coordinates for a pioneer area claim must have been deposited with the prospective certifying State by the date of adoption of the Final Act.

31. *Memorandum of Understanding on the Settlement of Conflicting Claims with Respect to Seabed Areas*, Draft (March 31, 1983) [hereinafter referred to as *Canadian MOU*].

32. States that were excluded are the United States, West Germany, the United Kingdom, Belgium, and Italy.

33. Canadian MOU, *supra* note 31, art. 4. The draft MOU is tied to the PIP resolution that "[t]he Parties, including all potential claimants, will seek to resolve their conflicts by means of negotiations or other procedures of their choice in accordance with paragraph 5 (c) of the Resolution Governing Preparatory Investment." *Id.* art. 5. Of course, this also ties the MOU to PIP's problems with dates and deadlines. *See supra* note 29.

34. *See* Canada, Letter to PrepCom (April 29, 1983) (LOS/PCN/15). The letter describes the actions of prospective certifying States in resolving conflicts through multi-lateral negotiations—the MOU process. In this context, and with specific reference to the Soviet Union, the letter states that "Canada cannot accept the view that a certifying State may satisfy the requirements of resolution II [PIP] by *unilateral interpretations* of

oneer area overlaps under the PIP regime may very well occur through binding arbitration. Understandings similar to the Canadian MOU may eventually be achieved under PIP as an alternative to binding arbitration.

Reciprocating States or "Mini-Treaty" Track

Domestic Laws

Several States already have enacted domestic seabed mining laws.³⁵ These laws provide an administrative mechanism for States to issue exploration licenses and commercial recovery permits for operations on the international seabed.³⁶ Most domestic seabed legislation contains a method for resolving geographical overlaps of seabed mining claims for exploration areas. Through "reciprocating States agreements," most legislation recognizes claims by States with similar seabed mining laws. The legislation prohibits the issuance of licenses for the exploration of claims that overlap claims of reciprocating States.³⁷ This article will examine United States laws and regulations because of the number of United States exploration li-

the legal significance of the actions of other certifying States" (emphasis added), thereby implying that the Soviet Union was not participating in the MOU process. The Soviet Union participated only initially in the MOU process.

In reference to a French letter to PrepCom that disagreed with the "Soviet approach" to conflict resolution (see *infra* notes 135-39 and accompanying text), the Soviets explained that "certain participants" in the Canadian MOU process "... insistently advocated the setting of time-limits for the exchange of coordinates which were considerably later than the time-limits established in resolution II—an arrangement which would be to the advantage only of countries which have not signed the Convention. . . ." Soviet Union, Letter to PrepCom (May 2, 1983) (LOS/PCN/17). Thus the Soviet Union apparently understood that its participation in the MOU process might increase the credibility of entities resolving conflicts outside of PIP and the 1982 Convention.

35. See e.g. United States: Deep Seabed Hard Mineral Resources Act, 30 U.S.C. § 1401 et seq. (Supp. V) (1981); Federal Republic of Germany: Act of Interim Regulation of Deep Seabed Mining, 20 I.L.M. 393 (1981) as amended at 21 I.L.M. 832 (1982); United Kingdom: Deep Sea Mining (Temporary Provisions) Act 1981, 20 I.L.M. 1219 (1981); France: Law on the Exploration and Exploitation of Mineral Resources of the Deep Seabed, 21 I.L.M. 808 (1982); Soviet Union: Edict on Provisional Measures to Regulate Soviet Enterprises for the Exploration and Exploitation of Mineral Resources, 21 I.L.M. 551 (1982); Japan: Law on Interim Measures for Deep Seabed Mining, 22 I.L.M. 102 (1983).

36. The laws also provide for levies or taxes on recovered minerals; the establishment of funds to store tax receipts, with the possibility that these funds could be directed to an international seabed authority sometime in the future; environmental protection; the maintenance of high seas freedoms; and enforcement. For comparisons among the domestic seabed mining laws see generally Wilson, *Mining the Deep Seabed: Domestic Regulation, International Law and UNCLOS III*, 18 TULSA L. J. 207-60 (1982); Auburn, *National Deep Seabed Mining Regimes and Reciprocity*, 4 OIL & GAS LAW AND TAXATION REV. 125-35 (1982); Luoma, *A Comparative Study of National Legislation Concerning the Deep Sea Mining of Manganese Nodules*, 14 J. OF MARITIME L. AND COMMERCE 243-68 (1983); Brown, *Deep-Sea Mining: The Consequences of Failure to Agree at UNCLOS III*, 7 NATURAL RESOURCES FORUM 55-70 (1983).

37. See *infra* notes 50-62 and accompanying text.

cense applications filed (ten) and the nation's leadership in the reciprocating States process.

In 1980, the United States Congress found that

legislation is required to establish an interim legal regime under which technology can be developed and the exploration and recovery of the hard mineral resources of the deep seabed can take place until such time as a Law of the Sea Treaty enters into force with respect to the United States.³⁸

As a result, Congress enacted the Deep Seabed Hard Mineral Resources Act of 1980 (DSHMRA), which included the establishment of an "interim program to regulate the exploration for and commercial recovery of hard mineral resources of the deep seabed by United States citizens" (emphasis added).³⁹ Congress intended DSHMRA to be transitional, pending the ratification of the 1982 Convention or

if such adoption is not forthcoming, the negotiation of a multilateral or other treaty concerning the deep seabed, and the entering into force of such treaty with respect to the United States.⁴⁰

Under DSHMRA, United States citizens may not engage in exploration for hard mineral resources⁴¹ without a license. The exploration license gives a company the necessary "security of tenure" to make substantial capital investments without the threat of claim-jumping by other United States companies.⁴² Companies exploring for hard minerals before the enactment of DSHMRA (pre-enactment explorers) are permitted to continue exploration activities if they apply for a license for a specific area.⁴³ The status of "pre-enactment explorer" gives a company a "priority of right" to explore "reasonably compact areas" of the seabed that are "bounded by a single continuous boundary."⁴⁴

Priority of right for the issuance of licenses is based on the chronological order in which applications are filed with the National

38. 30 U.S.C. § 1401(a)(16) (Supp. V) (1981).

39. *Id.* § 1401(b)(3).

40. 30 U.S.C. § 1441(3)(B) (Supp. V) (1981).

41. "Hard mineral resources" are "any deposit or accretion on, or just below, the surface of the deep seabed of nodules which include one or more minerals, at least one of which contains manganese, nickel, cobalt or copper." 30 U.S.C. 1403 (6)

42. 30 U.S.C. 1441(1)(B) (Supp. V) (1981).

43. *Id.* § 1411(b)(A). A United States citizen may continue exploration activities unless and until an administrative or judicial determination affirms a *denial* of certification or issuance of an exploration license. *Id.* § 1411(b)(B).

44. 30 U.S.C. 1413(b) and 15 C.F.R. 970.301(d), (e) (1982). When an application area is amended through the conflict resolution process, "new" areas may be proposed which "need not be adjacent to the area applied for in the original application," and therefore the amended area might not be bounded by a continuous boundary. 15 C.F.R. 970.302(g)(3) (1982); *see also infra* note 48.

Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce. Priority of right is maintained even if the application is only in "substantial" compliance with specific requirements as long as the application fully complies within a reasonable time.⁴⁵ Under NOAA regulations, all pre-enactment explorer license applications are deemed to have been filed at the same time.⁴⁶ Four multinational seabed mining consortia have filed pre-enactment exploration license applications with NOAA.⁴⁷

Congress intended chronological priorities of right to preclude exploration area overlaps. The concurrent entitlement of priorities of right, however, requires a procedure to resolve conflicts between pre-enactment explorers. In addition, once the "original" conflicts are resolved, "new" conflicts may arise with amendments to the original application areas.⁴⁸ Under NOAA regulations, conflict resolution in the United States may take one of three basic forms: (1) each applicant may voluntarily amend his application or agree with the other applicants to voluntarily amend all applications; (2) all applicants may voluntarily submit to an agreed binding conflict resolution procedure; or (3) failing either of these, the conflict must be resolved in a formal hearing before an administrative law judge.⁴⁹

Reciprocating States

Rights and restrictions of United States companies conferred by DSHMRA are inapplicable outside the jurisdiction of the United States. West Germany, the United Kingdom, France, Japan, and the Soviet Union have enacted their own domestic seabed mining laws.⁵⁰ Overlaps, therefore, can occur not only between applicants that file for exploration areas under the laws of one nation, but also between applicants that file under the domestic seabed mining laws of different nations.⁵¹

To prevent these overlaps, DSHMRA provides for reciprocal requirements with other seabed mining States.⁵² NOAA may designate

45. 15 C.F.R. 970.201-08(1982).

46. 47 Fed. Reg. 11513 (1982).

47. The consortia are OMA, OMCO, KCON, and OMI. 47 Fed. Reg. 27583-84 (1982).

48. "New" exploration areas proposed by pre-enactment explorers need not be adjacent to the area applied for in the original application, but must have been an area that the applicant has explored previous to enactment of DSHMRA and cannot be within an area originally applied for by any other applicant. 15 C.F.R. 970.302(g) (1982).

49. 15 C.F.R. 970.1001 (1982). This section details the formal hearing procedures.

50. See *supra* note 35.

51. Every "original" exploration area applied for under United States law had at least one conflict with another exploration area claim. L.J. Aurbach, Office of Ocean Minerals and Energy, NOAA, personal communication (March 8, 1983).

52. 30 U.S.C. § 1428 (Supp. V) (1981). The domestic seabed mining laws of other nations also provide for reciprocal arrangements. See *supra* note 35.

nate any foreign nation a "reciprocating State" based on positive findings by the State Department that certain requirements have been met. A reciprocating State must: (1) regulate seabed miners in a manner compatible with DSHMRA especially in environmental protection, natural resource conservation, safety of life and property at sea, and effective enforcement; (2) recognize licenses and permits issued under United States law; (3) recognize priorities of right of exploration licenses (or applications for licenses) and commercial recovery permits; and (4) provide "an interim legal framework for exploration and commercial recovery which does not unreasonably interfere with the interests of other States in their exercise of the freedoms of the high seas, as recognized under general principles of international law."⁵³ Once a foreign nation has been designated a reciprocating State, NOAA cannot issue an exploration license or commercial recovery permit that conflicts with a license, permit, or other authorization issued by that State.⁵⁴

The critical issue still exists of how exploration area overlaps can be resolved between applicants under different jurisdictions. As a precursor to a more comprehensive reciprocating States agreement, France, West Germany, the United Kingdom, and the United States have signed an "Agreement Concerning Interim Arrangements Relating to Polymetallic Nodules of the Deep Sea Bed"⁵⁵ (Interim Agreement). The agreement addresses the problem of overlapping area claims and provides that each State-party must first resolve domestic conflicts in accordance with its own domestic requirements.⁵⁶ If international conflicts still exist, signatory governments can assist license applicants in resolving conflicts voluntarily. If conflicts have not been resolved six months after the effective date of the Interim Agreement *and* the applicants are not "parties to a written agreement submitting the conflict to a specified binding conflict resolution procedure," conflicts must be resolved through binding arbitration.⁵⁷

53. 30 U.S.C. § 1428(a) (Supp. V) (1981). NOAA may consult with potential reciprocating States that have enacted, or intend to enact, domestic seabed mining legislation. The purpose of the consultation is to facilitate the designation of reciprocating States and negotiate agreements with potential and actual reciprocating States. *Id.* § 1428(f). Potential reciprocating States are those that already have enacted domestic seabed mining laws; Italy and Belgium, which have legislation under consideration and the Netherlands. See General Accounting Office, *supra* note 4, at 24-27; Auburn, *supra* note 36, at 134 (The legislation of Italy and Belgium is in an "advanced stage of drafting").

54. 30 U.S.C. § 1428(b) (Supp. V) (1981).

55. 21 I.L.M. 950 (1982) [hereinafter cited as Interim Agreement].

56. *Id.* art. 7.

57. *Id.* app. 1. The commercial consortia are parties to a private industry arbitra-

"Principles of equity" used to determine the priority of claims in binding arbitration under the Interim Agreement are virtually identical to the "factors" used in binding arbitration under PIP.⁵⁸

Mini-Treaty

Nations generally have drafted domestic seabed mining legislation that is interim and transitional in nature, pending the entry into force of the 1982 Convention or other multilateral treaty. The United States, however, has created a reciprocating process that can change DSHMRA from an "interim" law into an "alternative" law.⁵⁹ Through a multilateral arrangement, or "mini-treaty," more permanent than the Interim Agreement, DSHMRA presents an alternative to the 1982 Convention, which United States seabed mining firms and the Reagan Administration believe is unacceptably burdensome.⁶⁰

tion agreement that essentially precludes binding arbitration under the Interim Agreement. See *infra* notes 63-69 and accompanying text.

58. Interim Agreement, *supra* note 55, app. 2; see *supra* note 30 and accompanying text.

59. DSHMRA voices congressional intent that any international agreement concerning seabed minerals to which the United States becomes a party must "provide assured and nondiscriminatory access, under reasonable terms and conditions." 30 U.S.C. § 1441(1)(A) (Supp. V) (1981). Moreover, the agreement must provide "security of tenure" to pre-enactment explorers such that they may "continue their operations under terms, conditions, and restrictions which do not impose significant new economic burdens . . . with the effect of preventing the continuation of such operations on a viable economic basis." *Id.* § 1441(1)(B). This broad language is amenable to conservative interpretation, such as that advocated by the Reagan Administration in deciding not to sign the 1982 Convention. Wertebaker, *The Law of the Sea—II*, 59 THE NEW YORKER 56, 67 (Aug. 8, 1983). Commentators have argued that production limitations, technology transfer, and financial payments to the ISA fall within the ambit of significant new economic burdens. Cf. Ratiner, *Reciprocating State Arrangements: A Transition or an Alternative?* XVII ANNUAL CONFERENCE OF THE LAW OF THE SEA INST. (1983) (Oslo, Norway). "While the Law of the Sea Treaty contains a number of features which can reasonably be considered to be noxious by the standards of industrialized, free market economies, it does not on balance harm the potential for enjoyment of the economic benefits or exploitation of the resources." *Id.* at 15. A decision to use DSHMRA as an alternative to the 1982 Convention discounts the relative stability of the Convention's seabed regime, the opportunity for the United States to shape the administration of seabed mining by participating in PrepCom, and other advantages that inhere with adoption of the multifaceted 1982 Convention.

60. By choosing the mini-treaty rather than the 1982 Convention's seabed mining regime, the United States makes several assumptions. First, the nation assumes that seabed claims can be defended, using force if necessary, to ensure stability and thus security of tenure. Auburn, *supra* note 36, at 134. Second, the United States assumes that PrepCom cannot perform adequately without the participation of the United States or "decision-taking" by other developed, prospective reciprocating States. (For a discussion on the meaning of "decision-taking," see Mann-Borgese, *The New International Seabed Regime*, 6 MARINE POLICY REPORTS (February 1984). Indeed, after two meetings of the first session, PrepCom has yet to "begin to function" for the purposes of PIP. Personal communication with David Pasho, Ocean Mining, Energy, Mines and Resources Canada, Ottawa, Sept. 28, 1983. Third, the United States assumes that other facets of the 1982 Convention—limits to the territorial sea, contiguous zone, continental shelf, and exclu-

No such mini-treaty yet exists, but its beginnings can be found in the conflict resolution mechanism of the Interim Agreement.⁶¹ Presumably, a mini-treaty would strive to harmonize the several domestic seabed mining laws and provide necessary stability for security of tenure, while avoiding any significant new economic burdens. A mini-treaty would provide for: (1) the mutual recognition of (as well as the resolution of overlaps between) exploration area claims; (2) the mutual recognition of commercial recovery area claims; (3) environmental protection; (4) natural resource conservation; (5) safety of life and property at sea; and (6) effective enforcement.⁶² Finally, a mini-treaty can be politically feasible in an international sense only by disclaiming any derogation of obligations that a party may have under another related agreement, such as any pre-ratification obligations of France, Japan, and the Netherlands under the 1982 Convention.

Industry Negotiations

Concern for conflict resolution is not limited to national governments. Six seabed mining consortia, which include private and public companies from the United States, Canada, the United Kingdom, West Germany, Japan, Belgium, the Netherlands, Italy, and France, have signed an "Industry Arbitration Agreement" to resolve exploration area overlaps.⁶³ The agreement and associated negotiations are

sive economic zone; rights of innocent passage; navigation through straits; high seas freedoms; marine environmental protection; marine scientific research; dispute settlement; and others—are now customary international law. Codification of this law into a comprehensive treaty is merely a reaffirmation of its customary nature. Breaux, *The Case Against the Convention*, XVII ANNUAL CONF. OF THE LAW OF THE SEA INST. (1983) (Oslo, Norway). Fourth, the nation assumes that a substantial number of prospective reciprocating States are interested in proceeding with a mini-treaty. The United States, West Germany, the United Kingdom, France, Belgium, the Netherlands, and Italy have shown interest in participating in a "mini-treaty." The term "mini-treaty" is unattractive to some prospective participants, such as Japan and the Netherlands, who do not wish to create an impression that they are in conflict with their obligations as signatories to the 1982 Convention. See 1982 Convention, *supra* note 1, art. 137, para. 3.

61. See *supra* notes 55-58 and accompanying text.

62. 30 U.S.C. § 1428(a) (Supp. V) (1981).

63. The consortia involved in these private negotiations are OMA, OMCO, KCON, OMI, AFERNOD, and DORD. These groups are described in detail, *infra* notes 71-107. See e.g., letter from J.G. Arbuckle to J.P. Lawless, NOAA (Jan. 4, 1984). The letter refers to an accomplished "Final Settlement Agreement" and transmits a copy of a "Supplementary Settlement Agreement." The latter agreement has been signed by the six seabed mining consortia and AMR and resolves conflicts between the parties. Supplementary Settlement Agreement (Dec. 5, 1983). [The Final and Supplementary Settlement Agreements are hereinafter referred to jointly as Industry Arbitration Agreement.]

subject to secrecy and have been kept extremely confidential. The industry apparently has agreed to apportion, on a voluntary basis, the areas identified so far as the most promising. If no voluntary decision appears feasible, then binding arbitration can be invoked under the agreement by any of the parties.⁶⁴ The industry's agreement reasonably can be assumed to parallel the conflict resolution mechanisms under United States domestic law and the Interim Agreement.⁶⁵ Binding arbitration may already have been invoked, but no one has publicly announced the resolution of overlaps.⁶⁶ Several industry sources have indicated privately, however, that conflicts have been resolved on the basis of "equal sharing."⁶⁷

In any event, the industry agreement alone cannot effect worldwide conflict resolution since some State enterprises, most notably from the Soviet Union, have not been involved.⁶⁸ Nevertheless, agreement within the industry would be an important preliminary step toward conflict resolution under either the 1982 Convention or a mini-treaty.

This type of voluntary agreement among competitors for the division of prospective mining territory raises obvious concerns of potential antitrust problems. These concerns are raised particularly under the familiar American interpretation of antitrust principles, which tend to be less tolerant of combinations in restraint of competition than European tradition. The extent to which these concerns are justified under United States law is beyond the scope and competence of this study. On balance, the private conflict resolution arrangements most likely will go unopposed by the government's antitrust enforcement agencies, especially in light of a prior clearance of the consortia license applications by the Justice Department.⁶⁹

64. Private communications with company officials, *see supra* note 4.

65. *See supra* notes 49 and 56-58 and accompanying text.

66. *But see Citizens for Ocean Law*, OCEANS POLICY NEWS (November 1983) (noting that the Japanese have been brought into the private industry arbitration negotiations).

67. Private communication with company officials, *supra* note 4.

68. *Citizens for Ocean Law*, *supra* note 66, at 2.

69. DSHMRA empowers the Attorney General to conduct an antitrust review of seabed mining exploration licenses and to advise NOAA of likely competitive effects of the issuance of those licenses. 30 U.S.C. § 1413(d) (Supp. V) (1981). The Act further empowers the Attorney General to recommend ways to avoid any action upon an application that would create or maintain a situation inconsistent with the antitrust laws. The Department of Justice has, in fact, already reviewed the NOAA applications of OMI, OMCO, OMA, and KCON. Letters dated Sept. 30, 1982 and Dec. 17, 1982 from H.F. Furth, Deputy Assistant Attorney General, Antitrust Division (ATD), U.S. Department of Justice to J.P. Lawless, Acting Director, Office of Ocean Minerals and Energy, NOAA (Washington: U.S. Department of Justice). In each case the Justice Department concluded that the application "should not be denied for any reason arising from antitrust considerations." However, the letters also stated that the department's views were based on "limited review" and were "subject to qualification with regard to any matters or facts that a more extended review might disclose."

COMPANIES, STATES, AND PARTIES IN INTEREST: ORGANIZATIONAL
RELATIONSHIPS AND MOTIVATIONS

Several actors are involved in the process of securing entitlements to prospective seabed mining areas, either through the 1982 Convention or through complementary or competing mechanisms. The actors include: (1) seabed mining enterprises, such as (a) private com-

Although formal antitrust review under the Act is limited to review of the license applications themselves, and does not specifically include review of private conflict resolution agreements, some indications exist that a private agreement conforming to the resolution contemplated under the United States regulations has been reached and is being reviewed by the Justice Department. This review could well be within the scope of antitrust review empowered by the Act, and could be initiated either by the Justice Department or at NOAA's request as a "more extended review" to facilitate "any recommendation" the Attorney General "deems advisable to avoid any action upon" a NOAA application that would create or maintain a situation inconsistent with the antitrust laws. (Conceivably, the Justice Department's review of a private agreement could also be conducted at the request of the parties to the agreement under the department's business review procedures. But because such review is explicitly directed only to contemplated actions, the review seems less likely to be invoked for an accomplished agreement.)

In this context, the Justice Department: (1) declined to comment on the conflict resolution procedures described by NOAA regulations pursuant to DSHMRA; (2) received from NOAA a copy of the private Industry Arbitration Agreement arrived at to implement private resolution of conflicting license area claims, and declined to object to that arrangement; and (3) granted antitrust clearance to each of the exploration license applications, subject to the qualification already described. Therefore, since the Justice Department was previously informed of, and did not object to, the fact and format of the private conflict resolution arrangement, any review now would most likely be directed to the outcome of that procedure rather than to the procedure itself.

Antitrust objections might be directed to anticompetitive effects of the private arrangement on either the disposition and allocation of NOAA licenses or existing relevant markets. For example, an objection might be registered that the private resolution distorts the allocation of NOAA licenses by foregoing market mechanisms otherwise available to resolve the conflicts. *See, e.g.* Petition for Reconsideration of the United States Department of Justice, In the matter of An Inquiry into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Systems; Amendment of Parts 2 and 22 of the Commission's Rules Relative to Cellular Communications Systems, Before the Federal Communications Commission, Docket No. 79-318 (June 19, 1981). NOAA regulations, however, stipulate that disputes can be voluntarily settled in a "variety of relevant forms, including formation of a joint venture." 47 Fed.Reg. 5967 (1982). In any event, this objection would seem to go to the fact and format for private resolution rather than to the outcome itself. Concerns about effects on existing markets would depend on the exact definition of appropriate markets for antitrust purposes. The private agreements arguably represent an illegal market allocation and impose anticompetitive burdens on potential new entrants into seabed mining. However, the agreements also arguably facilitate the development of new sources of competition in existing metals markets. In any event, parties to an agreement would feel some degree of protection from antitrust attack to the extent that the private agreement conforms to the requirements of the federal regulatory authority.

Obviously, the antitrust issues associated with the private conflict resolution procedure and agreements are not clearcut, particularly in the absence of more factual information about the nature of those agreements. These issues, however, clearly do exist.

panies and commercial organizations, exemplified by the major international seabed mining consortia, and (b) state enterprises, which are organs of national governments directly investing in exploration and development similar to consortia efforts; and (2) national governments themselves, which conduct diplomatic activities and have been the official participants in and parties to international negotiations and agreements.

Seabed Mining Enterprises

A striking feature of the embryonic seabed mining economy, and perhaps most reflective of a general trend in international economic organization, is the mixed-form character of the groups assembled to develop and conduct the activity. Several of the world's largest and most influential private companies are involved. Yet none of the seabed mining enterprises is composed exclusively of privately-owned companies. All have at least some participation by national governments or State companies, and some are largely or entirely governmental operations.⁷⁰

Commercial Consortia

An early commercial pioneer in seabed mining research and exploration is the *Ocean Mining Associates* (OMA) consortium. This United States partnership was formed in 1974. That same year, OMA's operating company, Deepsea Ventures, Inc., filed a claim with the United States Department of State for a 60,000 square kilometer area of the Pacific.⁷¹ In recent years, OMA has been the most active of the commercial consortia, largely because of an infusion of funds in late 1980 when ENI, the Italian national oil company, joined the group. Like most governmental efforts in this area, the Italian government appears motivated primarily by an extra-economic interest in long-run diversity of supply rather than the profit potential of seabed metals sales.⁷² In addition to ENI's less-than-quarter share,⁷³ the consortium is held equally in greater-than-quar-

70. For a summary of the participation of seabed mining enterprises, see Appendix I.

71. Deepsea Ventures, Inc.: Notice of Discovery and Claim of Executive Mining Rights and Request for Diplomatic Protection and Protection of Investments, U.S. Department of State, filed Nov. 15, 1974.

72. Bastianelli, *Situazione e Prospettive del Mercato di Alcuni Metalli Non Ferrosi. Ruolo Strategico del 'Deep Sea Mining'*. *Gli Interessi Italiani*, 18 BOLLETTINO DELLA ASSOCIAZIONE MINERARIA SUBALPINA 303-23 (1981); Bastianelli, *IL NUOVO DIRITTO DEL MARE E L'ITALIA* (1982).

73. Under the terms of its entry into OMA, ENI paid a lump sum upon joining and agreed to pay more than two-thirds of the group's expenses until its total outlay equalled that of the other members. Upon reaching that point, each member would assume a 25% share of expenses.

ter shares by Sun, a diversified United States energy company; U.S. Steel, the largest United States steel producer and a major consumer of manganese; and Union Miniere, a Belgium mining concern associated with Belgium's large Societe Generale, which holds a major position in the world cobalt market. The consortium's total expenditures are estimated at more than \$130 million.⁷⁴ Most recently, the group has concentrated efforts on transferring information to the Italian partner and securing site claims and licenses. OMA has applied for a seabed exploration license area of 156,000 square kilometers.⁷⁵ Significantly, none of the OMA partners comes from a nation that is a signatory to the 1982 Convention. Therefore, OMA cannot qualify as a pioneer explorer under PIP requirements.⁷⁶

The commercial group that comes closest to being a purely private enterprise is the *Ocean Minerals Company* (OMCO), or the "Lockheed Group." This United States partnership consists of four companies from only two nations, the United States and the Netherlands. The consortium was organized by Lockheed in 1977 as an outlet for the company's high-technology deep seas operation capabilities. Today, the OMCO consortium also includes AMOCO Ocean Minerals Company, a wholly-owned subsidiary of Standard Oil of Indiana, holding about 31% ownership; Bos Kalis, a Dutch marine engineering concern, with less than 8%; and Billiton International Metals, a Dutch subsidiary of Royal Dutch/Shell, with about 31%. As operator and prime contractor for the OMCO partnership, Lockheed is earning immediate revenues from the group's activities, while the other partners are making direct outlays for those activities.⁷⁷ Expenditures by the group, largely for the development of a sophisticated remote-controlled mobile miner, are estimated at more than

74. 18 OCEAN INDUSTRY 49 (January 1983). Caution should be used in interpreting these estimates. They include estimated expenditures made at different points in time and apparently have not been adjusted for inflation. They are presented here only to indicate the relative scale of expenditures that have been made, not as exact measures of those investments. Because of their importance to questions of accrued equity interest in claimed sites, exact accounts of actual company expenditures are very closely-held proprietary information.

75. L.J. Aurbach, Office of Ocean Minerals and Energy, NOAA, personal communication, Feb. 8, 1984; 49 Fed. Reg. 4814 (1984). Area claim totals reflect adjustments made under the Industry Arbitration Agreement.

76. See *supra* note 23.

77. A significant portion of Lockheed's share in the venture was, furthermore, based on "in-kind" contribution of intangible capital acquired through earlier company efforts on seabed mining techniques, partly through the company's involvement in the Hughes' *Glomar Explorer* submarine recovery operation.

\$120 million.⁷⁸ Partly because the Netherlands is a signatory to the 1982 Convention while the United States is not, and partly because of the souring economics of seabed mining, Billiton has announced its withdrawal from OMCO, though legal implementation of this withdrawal apparently is still underway.⁷⁹ Similarly, Bos Kalis has declined to contribute to OMCO activities since early 1981, preferring to let its share dilute.⁸⁰ AMOCO's position toward further activities in the group is still unknown, while Lockheed continues to promote additional investment in marine mining.⁸¹ OMCO has applied to NOAA for a Seabed exploration license of 166,000 square kilometers.⁸²

The *Kennecott Consortium* (KCON) was formed as an unincorporated joint venture at the initiative of the Kennecott Copper Corporation in 1974. The consortium is composed of Kennecott, a wholly-owned subsidiary of Standard Oil of Ohio, which is controlled by British Petroleum (40%); British Petroleum itself (12%); Rio Tinto Zinc (12%) and Consolidated Gold Fields (12%), two British mining houses; Noranda (12%), a Canadian mining company; and Mitsubishi (12%), a Japanese conglomerate.⁸³ The consortium is managed by Kennecott, but decisions on expenditures and program of work are made by a full committee of members.⁸⁴ If Kennecott's 40% share is included as a British holding, rather than a United States holding, the combined British share in the group is 76%. The re-

78. OCEAN INDUSTRY, *supra* note 74, at 49.

79. BILLITON INTERNATIONAL NEWSLETTER, *supra* note 4.

80. Private communications with company officials, *supra* note 4.

81. *Id.*

82. *See supra* note 75.

83. The consortium's ownership structure in recent years has been dominated increasingly by British interests. The original members were Kennecott (50%), at that time an independent United States copper corporation; Rio Tinto Zinc (20%); Consolidated Gold Fields (10%); Noranda (10%); and Mitsubishi (10%). Formation of the group and participation by British companies were aided in 1974 when the British government made a loan to Rio Tinto Zinc and Consolidated Gold Fields of £ 830,000 under the Science and Technology Act of 1965. *Deep Sea Mining (Temporary Provisions) Bill [Lords]* 6, House of Commons, Special Standing Committee (First Sitting, May 19, 1981) [hereinafter cited as House of Commons]. Private discussions with company officials indicate that Mitsubishi's participation was assisted by the Japanese government. *See also* GAO, *supra* note 4, at 16-19. In 1977, British Petroleum was brought into the consortium through the purchase of half of Rio Tinto Zinc's share and the assumption of half of Rio Tinto Zinc's government loan responsibility. House of Commons, *supra*, at 14. Throughout most of the postwar period, the British government has held about 50% interest in British Petroleum, with reserved seats on the board of directors. More recently, however, the government share in British Petroleum has fallen to about 40%. British Petroleum acquired effective control over Kennecott when Standard Oil of Ohio, already controlled by British Petroleum, bought Kennecott in 1981. Subsequent readjustment in consortium shares reduced Kennecott's position to 40% and increased each of the other members' shares to 12%.

84. *Deep Sea Mining (Temporary Provisions) Bill [Lords]* at 109, 128, House of Commons, Special Standing Committee, (Third Sitting, June 4, 1981).

maining 24% is split between the companies from Canada and Japan, which, unlike the British, are signatories to the 1982 Convention. KCON has applied to NOAA for a seabed exploration license of 173,000 square kilometers.⁸⁵ The Kennecott Group's members apparently have been motivated by the prospect of eventual seabed mining profits, rather than, as may have been the case in the Lockheed Group, by more immediate revenues from the sale of research and development services.⁸⁶ Most of the estimated \$50 million spent by the group was invested before 1976, when the consortium became virtually inactive in exploration and technical development.⁸⁷

The multinational development consortium, *Ocean Management, Inc.* (OMI), was organized in 1975 by INCO (International Nickel Company of Canada), which has been for many years the dominant factor in the international nickel market.⁸⁸ OMI is a United States partnership,⁸⁹ composed of the Canadian INCO (25%); SEDCO (25%), a United States marine operator; Deep Ocean Minerals Company (25%), a complex Japanese corporate joint venture of 24 companies led by the Sumitomo Corporation; and Arbeitsgemeinschaft Meerestechnische Gewinnbare Rohstoffe (AMR)(25%), a West German partnership shared by Metallgesellschaft, the largest nonferrous metals company in Germany, Preussag, a major German extractive resources company with extensive marine operations capabilities, and Salzgitter, a State-owned diversified steel company with interests in shipbuilding and marine operations. AMR was formed in 1974 with the active encouragement of the West German government, including 50 to 100% governmental funding on a project-by-project basis, and loans and grants from the West German Ministry of Research and Technology.⁹⁰ Activities of the Japanese group in OMI also have been supported by loans from the Japanese government.⁹¹

85. See *supra* note 75.

86. Private communications with company officials, *supra* note 4.

87. House of Commons, *supra* note 83, at 109.

88. INCO was a pioneer in studies of the economic potential of seabed manganese nodules, beginning work in the late 1960s. INCO's involvement was initiated not out of sincere belief that nodules could be commercially exploited, but rather to protect the company's market position against the possibility of seabed competition. INCO, LTD, 1968 ANNUAL REPORT.

89. The OMI partnership is governed by a partnership committee with an annually rotating chairmanship and managed by a United States corporation owned by the partnership.

90. Fellerer, *German Activities in the Field of Nodules*, PROC. INTERNATIONAL SEMINAR ON OFFSHORE MINERAL RESOURCES (Oct. 23-27, 1978) (Orleans, France).

91. Nakahara, Comparative Study on Deepsea Development Policies of Japan and

OMI successfully tested its technological concepts by recovering large amounts of nodules in 1978. OMI has spent an estimated \$50 million to \$100 million on ocean mining research and development and exploration. Nearly all the funds were invested before 1980, when site-specific exploration activities were concluded.⁹² The consortium's current activities are limited to securing exploration area claims. OMI has applied to NOAA for a seabed exploration license of 135,000 square kilometers.⁹³ OMI apparently is suffering great internal stress from a diversity of motivations and objectives among the partners. The West German and Japanese groups respond to the interests of their government sponsors in developing alternative sources of long-run materials supply. INCO, on the other hand, intends to protect the company's eroding position in the world nickel market, while SEDCO seeks to diversify future demand for its marine technology capabilities as well as earn profits directly from metals production and marketing. The consortium's decision-making sometimes is frustrated by the "rule of unanimity," which confers an effective veto on each partner.⁹⁴ Diplomatically, the group is split in half, with Canada and Japan as signatories to the 1982 Convention and treaty process, while the United States and West Germany have declined to sign the Convention.

The French effort in seabed mining is almost entirely governmental, although two private companies are members of the French consortium. The *Association Francaise pour l'Etude et de la Recherche des Nodules* (AFERNOD) is a French syndicate formed in 1974. The company's major partner and leading organization is the French national agency for development and exploitation of ocean resources, IFREMER (formerly Centre National pour l'Exploitation des Oceans or CNEOX), which holds about 70% ownership. The next major partner also is an agency of the French government, the extensive Commissariat a l'Energie Atomique (CEA), with about 20% interest in the group. Both private partners—Societe Metallurgique le Nickel, the major French nickel producer, and Chantiers du Nord et la Mediterranee, a large shipbuilding concern of the Empain Schneider conglomerate (formerly Chantiers de France-Dunkerque)—have played relatively minor roles, each holding about 5%

the United States, (unpublished manuscript) (1982); private communications with company officials, *supra* note 4.

92. OCEAN INDUSTRY, *supra* note 74, at 49; private communications with company officials, *supra* note 4.

93. See *supra* note 75.

94. Private communications with company officials, *supra* note 4. SEDCO, Inc., *Agreement and Amendment to Joint Venture Agreement of February 20, 1975 and Memorandum of Understanding Relating to Disposal by SEDCO of its Individual Share of Products*, FORM 10 K ANNUAL REPORT (1975) [hereinafter cited as *Joint Venture Agreement*].

ownership. The group's expenditures are estimated at nearly \$50 million, although little development or exploration activity has occurred since 1979.⁹⁵

In recent months a new, solely-governmental group consisting of IFREMER and CEA has been formed to continue research and development. The new group is a "Groupement d'Intérêt Public" called GEMONOD.⁹⁶ AFERNOD will continue to exist formally, but the consortium's activities will be limited to acquiring exploration and mine site licenses. AFERNOD's original exploration area claim of 300,000 square kilometers has been modified under the Industry Arbitration Agreement.⁹⁷ The claim presumably has been reduced by about 50%, in conformance with publicly filed claims of the private consortia.⁹⁸ France has signed the 1982 Convention and is actively involved in the work of PrepCom. The nation is delaying ratification of the Convention until PrepCom's work on the rules and regulations of the ISA can be examined.⁹⁹

Although several Japanese companies, most notably Mitsubishi and Sumitomo, are involved actively in international commercial seabed mining consortia, the Japanese government also sponsors a large domestic consortium. In fact, the Japanese government appears consciously to have pursued a "dual policy" for seabed mining, which combines the coordination of an exclusively national program with the encouragement of Japanese company participation in international consortia.¹⁰⁰ Within the national program, a complex and

95. OCEAN INDUSTRY, SUPRA note 74.

96. See generally MINISTÈRE DE L'INDUSTRIE ET DE LA RECHERCHE, LES GROUPEMENTS D'INTERET PUBLIC: GUIDE D'INFORMATION (1983).

97. Private communications with company officials, SUPRA note 4.

98. In early 1982, OMA, OMCO, KCON, and OMI filed exploration license applications with NOAA. KCON filed in the United Kingdom, and OMI filed in West Germany (probably through AMR). During industry conflict resolution discussions under the Industry Arbitration Agreement, the applied-for areas were reduced as follows: OMA—from 290,600 to 156,000 square kilometers, a reduction of 46%; OMCO—from 299,881 to 166,000 square kilometers, a reduction of 45%; KCON—from 300,000 to 173,000 square kilometers, a reduction of 42%; and OMI—from 559,000 to 135,000 square kilometers, a reduction of 76%. Note, however, that AMR's West German application reportedly totals 145,000 square kilometers. If this area is added to OMI's amended application of 135,000 square kilometers, then the reduction from OMI's original 559,000 square kilometers area becomes only 50%. 48 Fed. Reg. 50386-87 (1983); 49 Fed. Reg. 3108, 4813-14 (1984); Aurbach, SUPRA note 75.

99. 24 OCEAN SCIENCE NEWS 2 (Dec. 20, 1982); see also *Unique Ceremony Marks End to Long Sea Law Conference*, 20 UN MONTHLY CHRON. 3, 7 (February 1983).

100. Koga, *Developing a Manganese Nodule Policy for Japan*, in OCEAN POLICY OF JAPAN (1982); Draft, Institute for Marine and Coastal Studies, University of Southern California; see also Nakahara, SUPRA note 91.

intimate relationship between the government and participating private companies sometimes blurs the distinction between the two groups. All Japanese companies that are members of international consortia also are participants in the national program. The national effort is focused through a joint government-industry firm, *Deep Ocean Resources Development Co., Ltd.* (DORD), formed in 1982 to promote nodule exploration and mining. DORD is financed largely by the government with some contribution by about 50 private companies, including the nearly 40 members of *Deep Ocean Minerals Association* (DOMA). Prior to DORD'S formation, DOMA was the primary organ linking Japanese national and private seabed mining exploration and development efforts.¹⁰¹

After the passage of Japanese domestic seabed mining legislation in 1982, DORD applied for a license for an exploration area south of Hawaii of roughly 336,000 to 575,000 square kilometers.¹⁰² An express purpose of DORD was to act as a Japanese delegate in international discussions for the division of prospective seabed mining areas.¹⁰³ Japan is a signatory to the 1982 Convention, and in February 1982, the Japanese government officially announced its intentions not to participate in a "mini-treaty."¹⁰⁴ Nevertheless, in December 1983, DORD reached agreement with other enterprises under the Industry Arbitration Agreement.¹⁰⁵ Assuming DORD's original area claim was reduced by about 50%, the revised claim would be 168,000 to 287,500 square kilometers.¹⁰⁶ Since 1981, the Japanese government has designated the development of a manganese nodule mining system as one of eight national "Large Scale Projects," with a projected 1981-89 budget of about \$86 million.¹⁰⁷

State Enterprises

In addition to the major mixed-form commercial efforts, several solely governmental research and development programs exist. Most of the programs are relatively new and have not been mounted on the same financial scale as the commercial consortia. Moreover, the

101. The Japanese Ministry of International Trade and Industry established DOMA as a technical promotion group in 1974.

102. Nakahara, *supra* note 91; Nakahara, *Recent Activities for Deepsea Manganese Nodule Development*, 13 KAIYO SANGYO KENKYU SHIRO (1982) (Research Institute for Ocean Economics, Tokyo); Aurbach, *supra* note 75.

103. To further that purpose, the Resource Survey Division of DOMA was reassigned to DORD in 1982.

104. Nakahara, *supra* note 91.

105. L.J. Aurbach, Office of Ocean Minerals and Energy, NOAA, personal communication (Sept. 16, 1983).

106. *See supra* note 98.

107. MANGANESE NODULE MINING SYSTEM, COMM. FOR COORDINATION OF JOINT PROSPECTING FOR MINERAL RESOURCES IN ASIAN OFFSHORE AREAS, (Note for Provisional Agenda Item—TAG.5.1) (Nov. 27, 1982).

governmental programs appear motivated more by an interest in alternative sources of long-run materials supply than by prospects for commercially-generated profits from the production and sale of metals.

Perhaps the most politically aggressive governmental seabed mining pioneer is the *Soviet Union*. Little is publicly known about the nature of the Soviet seabed mining program. The Soviets began scientific exploration for seabed nodules in the early 1960s, most notably with the research vessel *Vitjaz*.¹⁰⁸ Since 1977, Soviet agencies have been prospecting in various areas, including the Clarion and Clipperton fracture zones of the Pacific where commercial consortia efforts are concentrated, and have been developing exploration and recovery technology.¹⁰⁹ As early as 1974, in fact, the Soviets were prospecting with a specialized ship, the *Illmenit*.¹¹⁰ As a signatory to the 1982 Convention, the Soviet Union been actively involved in the activities of PrepCom. Indeed, the Soviets have adopted a confrontational posture that has complicated the conflict resolution proceedings of PrepCom.¹¹¹

India appears to be the first developing nation to carry out a successful oceanographic program dedicated to manganese nodule exploration.¹¹² Nodules are known to exist in the central Indian Ocean,¹¹³ and the Indians have focused their prospecting program on that area. The Indian Council of Scientific and Industrial Research and other Indian agencies give high priority to the development of technology for nodule mining, recovery, and beneficiation under a program called the "All India Coordinated Project," supervised by the government's Department of Ocean Development.¹¹⁴ In addition to the cost of ships, India reports that the government has invested "several million" dollars in exploration and resource assessment in the Indian Ocean.¹¹⁵

South Korea also has launched a national program for seabed

108. P.L. Bezrukov, *Manganese Nodules of the Pacific Ocean*, in TIKHIJ OKEAN (Pacific Ocean), Moscow: Izd. Nauka (Science Press), 203-68 (1970).

109. DEP'T OF INT'L ECON. AND SOC. AFF., UNITED NATIONS, SEA-BED MINERAL RESOURCE DEVELOPMENT 9 (1982).

110. R.M. Linebaugh, *Ocean Mining in the Soviet Union*, 14 MARINE TECHNOLOGY SOCIETY J. 21 (1982).

111. See *infra* notes 146-50 and accompanying text.

112. United Nations, *supra* note 109, at 10.

113. D.S. Cronan and S.A. Moorby, *Ore Grade Manganese Nodules from the Central Indian Ocean*, PROC. OCEANOLOGY INT'L (1982) (Brighton, England).

114. United Nations, *supra* note 109.

115. *Id.*

mining exploration and development. The government announced that \$30 million will be invested by the end of 1984. Similar to the Soviet program, little is publicly known about the Korean effort, except that the program apparently is supervised by the Korean Ocean Research and Development Institute. The extent to which the program will be organized as a State operation, private enterprise, or mixed-form remains to be seen.

China has conducted a manganese nodule research and development program since 1976, and has successfully recovered nodules in 1978 and 1979. Chinese exploration has occurred in various areas of the Pacific Ocean, including an "area of the central Pacific near the Equator."¹¹⁶ The Chinese government's investment in these activities is reported as more than 80 million yuan,¹¹⁷ of which more than 16 million yuan has gone directly to surveying activity.¹¹⁸ The government's work reportedly has been limited to basic scientific investigations under the general supervision and policy direction of the National Bureau of Oceanography. China is a signatory to the 1982 Convention and participates in PrepCom.

National Governments

In addition to their roles in seabed mining enterprises, national governments are central actors in the assignment of quasi-property rights for seabed mining sites. The governments' role primarily involves: (1) negotiating and adopting international agreements securing seabed mining rights;¹¹⁹ (2) directing, regulating, or conditioning the activities of seabed mining enterprises or organizations operating under the governments' jurisdictions; and (3) certifying such enterprises or organizations for the purposes of PIP.¹²⁰

Area entitlements granted to international consortia under either track are held by the consortia and their members, not by sponsoring governments. Still, the governments have an interest in the size of area entitlements conveyed to their nationals. Sponsoring governments have promoted development of seabed mining to acquire national access to alternative supply sources. In fact, the British government, as a condition of its 1974 loan, requires that British members of KCON make their share of that group's output available to British customers on a preferred basis.¹²¹ Governments also

116. *Id.*

117. In United States currency, 80 million yuan is roughly \$40 million.

118. United Nations, *supra* note 109, at 11.

119. Most States have negotiated and adopted either the 1982 Convention and its PIP provisions securing seabed mining rights, or interim international agreements. For a summary of the participation of seabed mining States in conflict resolution, see Appendix II.

120. *See supra* note 23.

121. House of Commons, *supra* note 84, at 137.

have assisted with and facilitated private company arrangements to resolve conflicts and allocate areas among themselves. Therefore, examining the pro-rated size of areas claimed by nationals from each country is interesting, although potentially misleading.

The *United States* has refrained from any direct financial involvement in commercial seabed mining development but nonetheless has been active as an interested government. Three of the major international commercial consortia—OMCO, OMI, and OMA—operate as United States business entities. In addition, United States companies hold substantial interests in four consortia, with pro-rated totals of “amended” area claims between 283,870 and 214,670 square kilometers.¹²² Consortia activities have qualified the United States enterprises as pioneer investors under PIP, but the United States cannot “certify” them for that status without signing the 1982 Convention.¹²³ The United States, as an originator of the Interim Agreement, has promoted the establishment of a reciprocating mini-treaty outside the 1982 Convention framework.

In early 1982, NOAA accepted ten license applications from the four United States consortia for “original” exploration areas totaling nearly 1,500,000 square kilometers. According to widespread reports within the industry, “substantial” area overlaps existed among the original domestic applications. Amendments by industry agreement to resolve the conflicts reduced the total exploration areas by roughly 50%.¹²⁴

Although the *United Kingdom* has not signed the 1982 Convention, the government is attending PrepCom meetings as an observer.¹²⁵ The United Kingdom also is a party to the Interim Agreement.¹²⁶ The Kennecott Group has applied under British law for two licenses covering 173,000 square kilometers.¹²⁷ Area claims of Brit-

122. The total United States' claims area varies depending on whether Kennecott's 69,200 square kilometer share of KCON's 173,000 square kilometer claim is viewed as belonging to the United States or the United Kingdom. See *supra* text following note 84.

123. The United States also has refused to participate as an observer at PrepCom meetings and to finance the commission.

124. See *supra* note 98.

125. States that signed the Final Act were permitted to participate in PrepCom as observers. Final Act, *supra* note 9, Annex I, Resolution I, para. 2.

126. The United Kingdom enacted domestic seabed mining legislation on July 20, 1981. See *supra* note 35.

127. The British government owns about 40% of British Petroleum which controls, directly or indirectly, 52% of the KCON consortium. Another 24% of KCON is divided between the British companies of Consolidated Gold Fields and Rio Tinto Zinc, giving British companies a total share of 76% in KCON (if Kennecott is viewed as a British company). The Royal Dutch/Shell Group's Billiton subsidiary, with its approximately

ish companies, after industry negotiations, total 62,280 or 131,480 square kilometers, depending on whether Kennecott is considered a United States or British company.

The *Federal Republic of Germany* similarly has refused to sign the 1982 Convention, but is a party to the Interim Agreement. OMI originally filed for a 559,000 square kilometer exploration area under West German seabed mining legislation.¹²⁸ The West German share of the area claim through AMR's participation in the OMI consortium, as amended through industry negotiations, is 33,750 square kilometers. In addition, AMR reportedly has filed a license application in West Germany of about 145,000 square kilometers, which is independent of the OMI application.¹²⁹ West Germany has supported industry involvement in seabed mining activities apparently because of concern for the long-run strategic importance of seabed metal supplies. The government has a direct interest in the seabed mining industry through its ownership of Salzgitter, a partner of AMR, and through its financial support of industry activities.

France is another major seabed mining nation that qualifies as a pioneer investor under PIP. With typically Gallic diplomatic verve, the French are party to the Interim Agreement,¹³⁰ as well as active participants in the PrepCom proceedings. Like West Germany,

31% share in OMCO, is also partially British-owned but, as previously mentioned, Billiton is withdrawing from further participation. See *supra* text accompanying notes 78 and 81.

128. See *supra* note 35.

129. See *supra* note 98. OMI is the only consortium in which West German companies participate. A 25% stake in OMI is shared equally through AMR by Salzgitter, Metallgesellschaft, and Preussag. Industry reports suggest that, to some extent at least, AMR has been acting in recent years as an independent national consortium on its own account. The extent to which AMR is permitted to do this under terms of the Joint Venture Agreement with the other OMI participants is unclear. Article II(2.2)(b) of the Joint Venture Agreement states that, subject to certain qualifications, "[d]uring the period of this agreement, no Participant, nor any of its Affiliates shall engage outside the Project in activities directly related to the field of ocean mining of Manganese Nodules so long as such Party remains a participant hereunder . . ." However, this article continues to state specifically that ". . . any Participant or Affiliate may engage in any such activity outside the project as a party in a project or projects sponsored or promoted by any government or any governmental agency or governmental corporation of the country under whose laws the Participant or Affiliate concerned has been organized or incorporated or with the written consent of all other participants entitled to vote. . . ." *Joint Venture Agreement, supra* note 94, at 4. A Memorandum of Understanding, of February 28, 1975, further clarifies the Joint Venture Agreement: "The Participants . . . recognize and acknowledge that in any such multinational undertaking the present and future relationships and obligations of each Participant and its Affiliates to its national government will be observed and satisfied so far as is possible . . . so as not to confer on others not a party to the said Agreement the benefits or proprietary rights which accrue to each of the participants as parties to the Agreement." *Id.* at para. 1. Independent AMR activity apparently must be justified as state required action or consented to by the other members.

130. France enacted domestic seabed mining legislation on December 23, 1982. See *supra* note 35.

France takes a long-term strategic view of the value of a seabed mining stake. Consistent with this attitude, the French effort appears to be cognizant of and responsive to the activities of other nations. France has a two-prong domestic mining program, with the mixed-form AFERNOD and, more recently, with the governmental enterprise GEMONOD. Unlike the Japanese, France has no involvement in international or multinational commercial seabed mining enterprises. After private discussions under the Industry Arbitration Agreement, France's original 300,000 square kilometer claim presumably was reduced to about 150,000 square kilometers.¹³¹

Japan's complex involvement in seabed mining already has been described.¹³² Mitsubishi holds a 12% share in KCON, and the Sumitomo-led DOMCO group holds 25% of OMI. In addition, the domestic Japanese effort coordinated through DORD has moved ahead with an ambitious investment program. The publicly-announced Japanese area claims total roughly 336,000 to 575,000 square kilometers but undoubtedly have been reduced to accommodate DORD's participation under the Industry Arbitration Agreement.¹³³ As a populous, resource-poor, industrial economy, Japan is motivated by the prospects of diversified materials supply through seabed mining development. Japan especially is interested in maintaining friendly relations with less developed supplier nations because of similar national characteristics.

Japan has signed the 1982 Convention and has been a participant in PrepCom. Japan enacted domestic seabed mining legislation on July 20, 1982, but is not a party to the Interim Agreement.¹³⁴ Nevertheless, the Japanese have been involved in international discussions concerning the Interim Agreement and the private Industry Arbitration Agreement.¹³⁵

Italy thus far has declined to sign the 1982 Convention. Although not a party to the Interim Agreement, Italy has been involved in discussions concerning the agreement because of the nearly 25% share ENI holds in OMA. Indeed, the "hurry-and-spend-to-catch-up" role that the Italians have played in OMA is motivated, in part at least, by an effort to qualify under the terms of the Interim Agreement or PIP. The government is interested in seabed mining

131. See *supra* note 98.

132. See *supra* notes 100-07 and accompanying text.

133. See *supra* note 98.

134. See *supra* note 35.

135. Nakahara, *supra* note 91.

because of national strategic mineral supply considerations.¹³⁶ Italy's total area claim—its share of the OMA claim—is 39,000 square kilometers.¹³⁷

Belgium also has not signed the 1982 Convention and is not a party to the Interim Agreement. But, like Italy, the government is participating in negotiations and discussions under the agreement because of Union Miniere's more than 25% share of OMA. The Belgian share of the OMA claim is 39,000 square kilometers.¹³⁸ In addition, Belgium is attending PrepCom proceedings as an observer.

Canada has a major stake in seabed mining, not only because of INCO's 25% share of OMI and Noranda's 12% of KCON, but also because Canada is a major world nickel producer and a principal beneficiary of the 1982 Convention. The Canadian share of KCON and OMI area claims totals 54,510 square kilometers.¹³⁹ Canada has signed the 1982 Convention and has played an active role in the conflict resolution activities of PrepCom. Although Canada is not a party to the Interim Agreement, the Canadian government may be involved in international discussions related to the Interim Agreement.¹⁴⁰

The *Netherlands* has an interest in seabed mining because of the nearly 40% share of OMCO held by two Dutch Companies, Billiton and Bos Kalis. Billiton, however, is withdrawing from the consortium, and Bos Kalis has discontinued active participation with its share diluting if other partners continue to invest. Pending those changes the Dutch share of OMCO's claim totals 63,080 square kilometers.¹⁴¹ The Netherlands has signed the 1982 Convention and is a participant in PrepCom. While not a party to the Interim Agreement, the Dutch government may have become involved to some extent in related international discussions.¹⁴²

India has sponsored a domestic seabed mining program that has concentrated on the nodule resources of the Indian Ocean. The Indian government has signed the 1982 Convention and has played an active role in PrepCom, but has not been involved in the Interim Agreement or associated discussions. Although India's area claim has not been publicly announced, the government has stated that its

136. Bastianelli, *supra* note 72, at 316.

137. *See supra* note 98.

138. *Id.*

139. *Id.*

140. Two Canadian companies, INCO and Noranda, are members of international consortia that have been involved in the Industry Arbitration Agreement. Because industry agreement may facilitate conflict resolution under the mini-treaty track, Canada may have been involved in international discussions related to that track. Canada has maintained its position, however, in support of conflict resolution under PIP.

141. *See supra* note 98.

142. L.J. Aurbach, Office of Ocean Minerals and Energy, NOAA, personal communication, (May 5, 1983).

interest is restricted to the Indian Ocean and does not conflict with the Soviet Union's claim in that area.¹⁴³

The size of the *Soviet Union's* claim is not publicly known, but the government agrees that no conflict exists with India's claim.¹⁴⁴ The Soviet Union sponsors a national seabed mining program,¹⁴⁵ but is not a party to the Interim Agreement and was involved only in the early stages of related international discussions.

The Soviets have signed the 1982 Convention and have pursued an aggressively independent and impatient policy at the PrepCom deliberations. At PrepCom, the Soviets have noted the "absence" of "any provisions concerning reciprocal obligations of certifying states regarding the exchange of coordinates" in PIP and have argued that this absence prevents negotiations on conflict resolution.¹⁴⁶ The government announced its intention to register as the *first* pioneer investor on May 1, 1983 if PrepCom does not receive notice from prospective certifying States of a readiness to exchange coordinates and resolve conflicts.¹⁴⁷ Several prospective certifying States argued that the Soviet's position is premature since PrepCom has not begun to function.¹⁴⁸ Nonetheless, the Soviets reportedly have delivered an application to the United Nations Secretariat in a sealed envelope.¹⁴⁹ Whether the Soviet application contains geographical coordinates is unknown.¹⁵⁰

China sponsors national research, exploration, and development toward seabed mining, but is not involved with the Interim Agreement. The government is a signatory to the 1982 Convention and participates in PrepCom. The Chinese have not yet sought claim to a

143. India, Note Verbale to PrepCom (May 13, 1983) (LOS/PCN/21).

144. Soviet Union, Letter to PrepCom (May 4, 1983) (LOS/PCN/19).

145. The Soviet Union enacted domestic seabed mining legislation on April 17, 1982. See *supra* note 35.

146. Soviet Union, Letter to PrepCom (April 6, 1983) (LOS/PCN/4).

147. *Id.*

148. France, Letter to PrepCom (April 27, 1983) (LOS/PCN/8); Japan, Letter to PrepCom (April 28, 1983) (LOS/PCN/11); Canada, *supra* note 34.

149. The envelope was forwarded to the chairman of PrepCom, who returned it to the United Nations Secretary General asking that it be kept safely and unopened until PrepCom begins to receive area applications. The chairman acknowledged receipt of the Soviet package. M.L. Pal, United Nations, Ocean Economics and Technology Branch, personal communication (1983); see also United Nations, Department of Public Information, Preparatory Commission for Sea-Bed Authority and Tribunal for Law of the Sea Concludes Resumed First Session in Kingston, Jamaica, Press Release (Sept 12, 1983) (SEA/523) (outlining registration guidelines for pioneer investors).

150. Commercial consortia speculate that the Soviet letter defines the Soviet claim geographically and that the claim overlaps areas sought by three consortia. Private communications with company officials, *supra* note 4.

seabed exploration and mine site but have described exploration and development activities¹⁵¹ and may have an interest in qualifying for a site under the Convention's PIP provisions.

South Korea has initiated an accelerated national seabed mining effort.¹⁵² The government has signed the 1982 Convention and has participated in PrepCom proceedings. To date, the South Koreans have not sought exclusive entitlement to any specific area for exploration and development of seabed mining.

Other countries that have shown an interest in conflict resolution through their activities at PrepCom and that may conceivably attempt to qualify as pioneers under PIP include Australia, Egypt, Finland, Indonesia, Kuwait, Norway, Pacific archipelagic States, Sweden, and Spain. Norwegian companies have been employed as contractors by the international consortia. In addition, the Norwegian government has sponsored research and development activities through the "Deep Ocean Nodule Mining Project," apparently to explore the potential of Norwegian enterprise as a supplier to the seabed mining industry.¹⁵³ None of the other countries has any direct involvement in seabed mining development or exploration, and none has staked a claim to any prospective mine sites.

CONFLICT RESOLUTION IN DIVERGENCE OR CONVERGENCE OF REGIMES

Several difficulties arise with conflict resolution procedures under different regimes. Resolution of conflicts under either regime does not remedy the problem of conflicts arising between regimes. The regime under which seabed mining eventually will proceed may be partially determined by the ability to resolve conflicts more rapidly under one alternative than the other.¹⁵⁴ Nevertheless, any resolution of conflicts, regardless of the track on which it occurs, represents some progress toward overall resolution for both tracks.

Successful conflict resolution would move either regime closer to functioning as a regulatory mechanism. This movement would create the potential for greater divergence between regimes, particularly since both regimes restrict cross-participation. For example, enactment of domestic seabed mining legislation is required for a State to enter into a reciprocating "mini-treaty" regime. This requirement

151. United Nations, *supra* note 109.

152. Bong Chool Suk, Geological Oceanography Lab., Korean Ocean Development Institute, Seoul, Korea, personal communication (Apr. 4, 1984).

153. Marjoram, *Nodules and Scandanavia—Mining Opportunities*, 3 MARINE POLICY 313-15 (1979).

154. Of course, in evaluating the relative advantages of one regime over another, a seabed mining enterprise must look past the required conflict resolution process and consider other factors, such as regime stability and financial costs incurred.

precludes participation by a country with no domestic seabed mining law, like Canada. On the other hand, the "Canadian" MOU clearly intended to resolve overlapping pioneer area claims among prospective certifying States under PIP. Although some nonsignatory States apparently were involved in early MOU discussions, the discussions were stalled in part because of Soviet disapproval of participation by nonsignatories.¹⁵⁵ Three out of four parties to the Interim Agreement have not signed the 1982 Convention. France, the only signatory to both the Convention and the Interim Agreement, may compromise its 1982 Convention position (even before ratification) if the government supports a United States-backed reciprocating States or mini-treaty regime.¹⁵⁶

Suppose the United States and other prospective reciprocating States conclude a mini-treaty and their nationals claim exploration areas between the nodule-rich Clarion and Clipperton fracture zones. Imagine that the Soviet Union and other 1982 Convention signatories register claims for pioneer areas under the PIP regime at the same time and in the same region of the Pacific seabed. Overlaps between exploration and pioneer area claims probably would result. Conflicts are inevitable under two concurrently operating regimes, and uncertainties exist as to whether one regime can be preferred over the other in an international legal sense.¹⁵⁷ Since no mechanism exists to resolve conflicts between opposing seabed mining regimes,

155. See *supra* note 34.

156. Ratiner, *The Law of the Sea: A Crossroads for American Foreign Policy*, 60 FOR. AFF. 1006, 1017, n.3 (1982); see also 1982 Convention, *supra* note 1, art. 137, para. 3. By not officially recognizing area claims of nonsignatory States and merely agreeing not to issue licenses that conflict with or overlap claims of those States, France might be able to join a mini-treaty and not be in violation of article 137, paragraph 3.

157. The emergence of a mini-treaty regime to challenge a recognized, but not yet effective, PIP regime certainly will be questioned. Singapore's Ambassador T.B. Koh, President of the Third United Nations Conference on the Law of the Sea, has threatened to seek an advisory opinion from the International Court of Justice on the legality of mining the seabed outside the 1982 Convention. One commentator notes, however, that principles of majority rule or priority in time are nonexistent in international law. D'Amato, *An Alternative to the Law of the Sea Convention*, 77 A.J.I.L. 281, 283 (1983). The Commentator implies that the 1982 Convention's predominance is not guaranteed by having more signatories or concluding earlier than a mini-treaty. In fact, D'Amato suggests that actual mining practice under one of the two regimes, which exhibits the implementation of one treaty before the other, may be the determinant in any evaluation of regime predominance. *Id.* at 284. Some commentators believe that the 1982 Convention regime is more stable than a mini-treaty regime because of its greater international acceptance and the difficulty of modifying embodied rules. Ratiner, *supra* note 59. Others believe that the Convention's ponderous provisions outweigh any perceived stability. In any event, neither regime has established a track record to prove legal or economic viability, so political considerations prevail.

the consequence is confrontation, or at least and much more likely, a stalemate for seabed mining.¹⁵⁸

The above scenario is not entirely fantastic. With none of OMA's parent governments signatory to the 1982 Convention and therefore unable to "certify" the group as a pioneer under PIP, the OMA consortium is effectively locked-out of PrepCom conflict resolution. If the Soviet Union had knowledge of the OMA area claim coordinates, the government could take advantage of OMA's years of work in locating a promising site by applying to PrepCom for the identical area claim under PIP.¹⁵⁹ This would confer on the Soviets a low-cost public relations benefit by permitting them to assume the role of "enforcer" of the 1982 Convention against the "outlaw" claims of the United States partnership. The Soviet's efforts may be frustrated, however, by conflict resolution agreements under the private Industry Arbitration Agreement. OMA and the other consortia have privately agreed to exchange portions of previously claimed areas, so the original OMA site will have become part of the applications of others. A Soviet effort to claim-jump OMA through PIP, therefore, would involve the Soviets in conflicts with other groups that are represented in PrepCom and are prospectively PIP pioneers.

Such cross-track conflicts, however, may increase convergence by identifying means for inter-track resolution, and thus increase integration. The two regimes are not dissimilar and, if not for the "alternative" flavor of the reciprocating mini-treaty process, could be viewed as complementary. Both call for voluntary resolution of conflicts, followed by binding arbitration if voluntary resolution fails.¹⁶⁰ The factors used by both regimes to determine area claim priorities under binding arbitration are virtually identical.¹⁶¹ After area claim overlaps have been resolved, both regimes impose similar "due diligence" requirements on pre-enactment explorers or pioneers.¹⁶² In addition, both regimes exact financial payments from seabed miners,

158. See generally Antrim and Sebenius, *Incentives for Ocean Mining Under the Convention*, in *LAW OF THE SEA: U.S. POLICY DILEMMA*, 79-99 (Oxman, Caron and Buder eds. 1983). The authors note, however, that from the perspective of the 1982 Convention signatories, "the problems of site conflict with nontreaty miners may be reduced through agreement outside of official channels." *Id.* at 97.

159. Industry observers believe that the Soviets could have a good idea of OMA's site coordinates through satellite observations of at-sea work and through Deepsea Venture's 1974 announcement of its preferred mining site. See *supra* note 71.

160. See Interim Agreement, *supra* note 55; 15 C.F.R. 970.201—970.208 (1982); Final Act, *supra* note 9.

161. *Id.* See *supra* text accompanying notes 30 and 58.

162. During exploration, DSHMRA requires licensees to incur "periodic reasonable expenditures" as determined by NOAA. 30 U.S.C. 1418(b) (Supp. V) (1981). Under PIP, pioneer investors "shall agree to incur periodic expenditures" as determined by PrepCom. Final Act, *supra* note 9, at Annex I, Resolution II, para. 7(c). Of course, NOAA and PrepCom may not decide upon the same definition for "periodic expenditures."

although these payments differ under each regime.¹⁶³

The Interim Agreement between France, West Germany, the United Kingdom, and the United States recognizes the interim (not alternative) nature of domestic seabed mining laws and clearly contemplates the resolution of conflicts among pioneers pending the entry into force of the 1982 Convention.¹⁶⁴ The harmonization of domestic seabed mining laws envisioned by a reciprocating States agreement seems advantageous to normalize seabed mining regulation and, at the same time, resolve exploration area conflicts under the PIP regime. France and Japan are active participants in both tracks, and The Netherlands and Belgium bridge both regimes to a lesser extent.

Conflict resolution by seabed mining enterprises under the Industry Arbitration Agreement could serve the purpose of PIP, but only if private agreement is reached before PrepCom begins to accept PIP applications. PrepCom has been progressing slowly, so that conflict resolution outside of PrepCom can be expected to contribute to the conflict resolution specified by PIP.¹⁶⁵ Furthermore, the 1982 Convention may be joined by States not yet parties. The inception of seabed mining economically is projected far into the future so that many years will be available for resolution of conflicts without concerns over actual operational claim-jumping. The prospects are favorable that conflict resolution activities eventually will contribute to a convergence of tracks rather than a divergence.

CONCLUSION

The conflict resolution process is crucial to the inception of seabed mining. Without the resolution of area claim overlaps, seabed mining enterprises will not have the security of tenure necessary to prevent claim-jumping and to make major mining investments. Hence, the timing of salient events in the development and execution of the conflict resolution processes have set the pace of seabed mining since 1980.

Efforts by seabed mining enterprises to obtain entitlement to exclusivity of activity within preferred sites on the international sea

163. Antrim & Sebenius, *supra* note 158, at 86-89. The tax under DSHMRA disappears when an international deep seabed mining treaty takes effect with respect to the United States, or after June 28, 1990, whichever occurs first. 26 U.S.C. § 4498(a) (Supp. V) (1981).

164. *Id.*

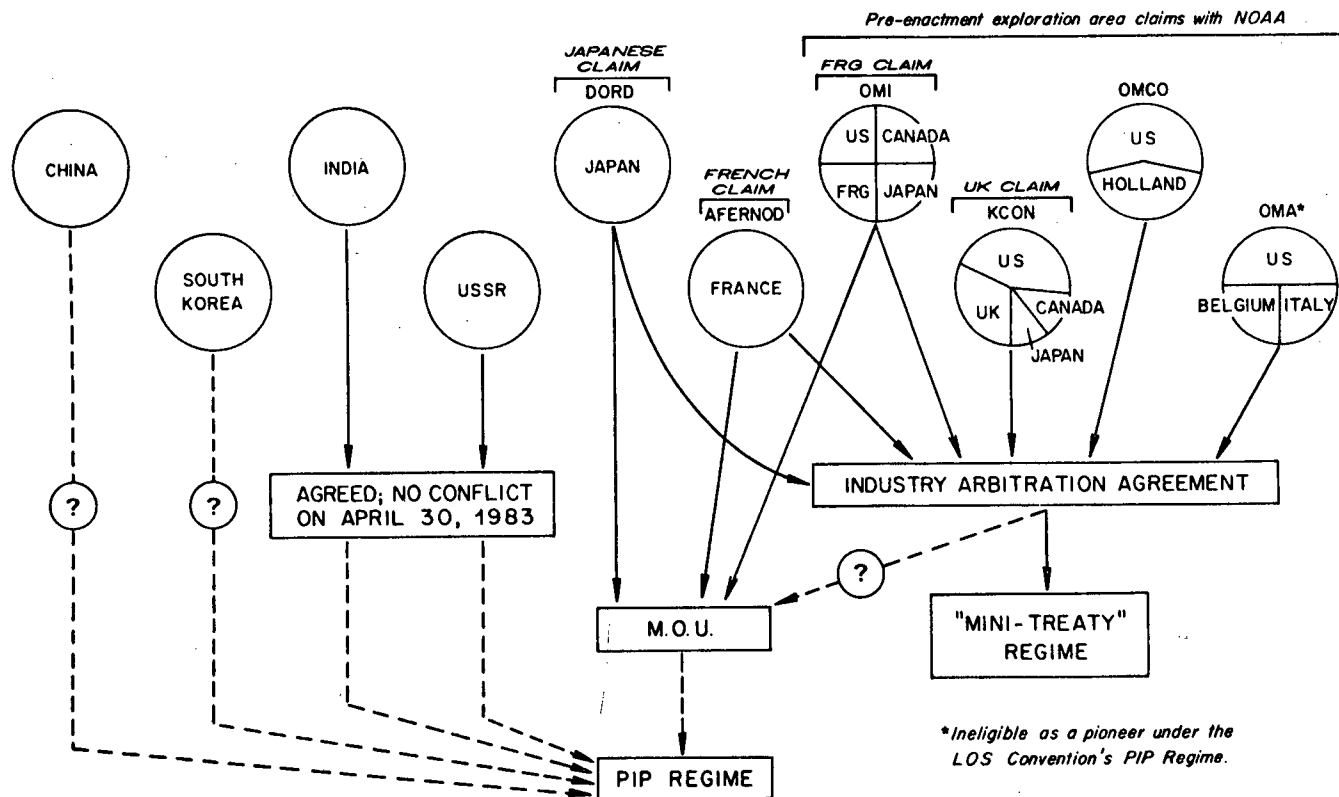
165. Because of some States' involvement in both processes, the pace of PrepCom may be controlled somewhat to permit this result.

floor have been channeled into two more or less competing tracks. One track leads to a regime under the 1982 Convention and requires compliance with conditions necessary for qualification as a "pioneer" under PIP. The other track involves qualification as a "pre-enactment explorer" under domestic legislation, along with reciprocal arrangements on a multinational basis. The second track could lead to an alternative "mini-treaty" for seabed mining regulation. On both tracks, conflict resolution procedures have been devised to eliminate geographical area overlaps before the assignment of entitlements.

The tracks' conflict resolution procedures are similar, and successful resolution in either track could facilitate progress in the other. Some parties, most notably Japan and France, are engaged in both efforts and could form a bridge between the two regimes. Indeed, the arrangements developed through efforts in the separate tracks could contribute eventually to a convergence of the two regulatory regimes.

Because of the novelty of institutions and regulations for the international organization and governance of seabed mining activities, efforts to resolve conflicting claims have required imaginative arrangements and innovations in multilateral relationships. The mixed-form character of the embryonic seabed mining industry also has necessitated creative conflict management. Altogether, the attempts at conflict resolution have been an international learning experience and have helped to pave the way to greater global economic integration. Such attempts may not move the world closer to a "new international economic order," but they represent an exercise in the creation of new organizational mechanisms for the increasingly mixed-form world economy that is responsive to political will and the economic exigencies of commercial reality.

PARTICIPATION OF SEABED MINING ENTERPRISES IN CONFLICT RESOLUTION



PARTICIPATION OF SEABED MINING STATES IN CONFLICT RESOLUTION

