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Closing a Commons: How a Novel Property Regime Can Promote Peace and Efficient Extraction of Deep Sea Resources in the South China Sea

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CLOSING A COMMONS: HOW A NOVEL PROPERTY REGIME CAN PROMOTE PEACE AND EFFICIENT EXTRACTION OF DEEP-SEA RESOURCES IN THE SOUTH CHINA SEA

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ABSTRACT

Disputes over maritime boundaries result in inefficient outcomes for all parties to the conflict. The investments required to exploit deep-sea resources are too costly for risk-averse states to attempt to tap into mineral and hydrocarbon deposits beneath disputed boundaries. Consequently, more risk-tolerant states may exploit deep-sea resources without other parties receiving any form of compensation. Alternatively, in some cases no parties will opt to invest in or sponsor such operations because of the uncertainty and risk, depriving surrounding states of the economic benefits tied to those deep-sea resources.

This paper relies on principles underlying Coasian bargaining to develop a template for the immediate resolution of maritime disputes to allow for the efficient exploitation of deep-sea resources. It fills a gap in the literature on these disputes by calling for a framework other than the application of the provisions of the United Nations Convention on the Law of the Sea. Though other authors have applied property-based thinking to topics related to the Law of the Sea, those inquiries have not directly addressed how that thinking could resolve specific disputes over deep-sea resources, such as in the South China Sea.

INTRODUCTION

Disputes over maritime boundaries result in inefficient outcomes for all parties to the conflict. Contesting parties commonly waste political and financial capital defending their claims and challenging the claims of others.[1] The resources within the water column as well as the deep-sea resources below the surface cannot be efficiently managed because of such disputes. The investments required to exploit deep-sea resources are too costly for risk-averse states to tap into mineral and hydrocarbon deposits beneath disputed territories. Consequently, more risk-tolerant states may exploit deep-sea resources without other parties receiving any form of compensation. Alternatively, in some cases, no parties will opt to invest in or sponsor such operations because of the uncertainty and risk, depriving surrounding states of the economic benefits tied to those deep-sea resources.

This paper relies on principles of Coasian bargaining to develop a template for the immediate resolution of maritime disputes, allowing for the efficient exploitation of deep-sea resources. It fills a gap in the literature on these disputes by calling for a framework other than the application of the provisions of the United Nations Convention on the Law of the Sea (UNCLOS). Though other authors have applied property-based thinking to topics related to the law of the sea, those inquiries have not directly addressed how that thinking could resolve specific disputes over deep-sea resources. Christiana Ochoa analyzed how nations with weak regulatory frameworks could use contracts to more efficiently exploit deep-sea minerals in their uncontested Exclusive Economic Zones (EEZ).[2] Joachim Claudet, Diva J. Amon, and Robert Blasiak offered a framework grounded in equity to explore the proper distribution of resources within areas beyond national jurisdiction.[3] The economic concepts employed in this paper, such as the importance of reducing transaction costs to facilitate efficient outcomes, have been explored in other contexts related to international law. Eric Posner and Alan O. Sykes utilized the concept of transaction costs and other related concepts in their discussion of when

1. *See, e.g.,* Geoff Ziezulewicz, *US Military Challenged Fewer Maritime Claims with FONOPs in FY 2020*, NAVYTIMES (Mar. 10, 2021), https://www.navytimes.com/news/your-navy/2021/03/10/us-military-conducted-fewer-fonops-in-fy-2020 [https://perma.cc/UGA2-E7E2] (reporting that in fiscal year 2020, the U.S. military used freedom of navigation operations to contest twenty-eight maritime claims, down from thirty-six in 2019).

2. *See* Christiana Ochoa, *Contracts on the Seabed,* 46 YALE J. INT'L L. 103 (2021).

3. *See* Joachim Claudet et al., *Transformational Opportunities for an Equitable Ocean Commons*, 118 PNAS 1 (2021).

efficiency may justify breaches of international law.[4] Finally, others such as Isaac Kardon have forecasted that UNCLOS will not resolve conflicts in the South China Sea,[5] but few have offered details of an alternative regime to allow for economic exploitation and to foster peace.

This paper contributes to the literature by applying Coasian bargaining to the settlement of maritime border disputes in the context of efficiently exploiting deep-sea resources. Rapid technological advances that have lowered the price of extracting deep-sea resources and made extraction possible at deeper depths mean that the opportunity cost of leaving resources in the sea has increased.[6] The residents of coastal states have the chance to significantly benefit from the value of the resources in their territorial seas and EEZ, so long as the coastal state has a clear property right to offer to parties interested in exploiting or preserving those resources. In many cases, coastal states cannot authoritatively offer a part of the seabed to an external actor because of the ambiguity surrounding their possession of that right. Conflicts over maritime boundaries blur possession of the right to exploit deep-sea resources in the South China

4. *See* Eric A. Posner & Alan O. Sykes, *Efficient Breach of International Law: Optimal Remedies, "Legalized Noncompliance," and Related Issues*, 110 MICH. L. REV. 243 (Nov. 2011).

5. *See* Isaac B. Kardon, *China Can Say "No": Analyzing China's Rejection of the South China Sea Arbitration*, 13 U. PA. ASIAN L. REV. 1 (2018).

6. Jonathan Watts, *Race to the Bottom: The Disastrous, Blindfolded Rush to Mine the Deep Sea*, GUARDIAN (Sept. 27, 2021), https://www.theguardian.com/environment/2021/sep/27/race-to-the-bottom-the-disastrous-blindfolded-rush-to-mine-the-deep-sea [https://perma.cc/Q9D2-C5T5] (describing how entities such as the Metals Company are in prime position to begin extracting deep-sea minerals from lucrative areas).

Sea,[7] the East China Sea,[8] the Yellow Sea,[9] the Arctic Sea,[10] the Mediterranean Sea,[11] the Indian Ocean,[12] and several other locations.

Traditional frameworks for resolving these disputes have not resolved questions related to the efficient exploitation of deep-sea resources.[13] The dearth of frameworks for the expeditious resolution of maritime conflicts has broad ramifications. More than half of the world's 512 potential maritime boundaries are disputed.[14] One approach has been to punt the issue of deep-sea extraction to a future date. When India and Sri Lanka completed the 1974 Indo-Lanka Maritime Boundary Agreement to resolve a dispute over the Palk Strait, they agreed only to "seek to reach agreement as to the manner in which the structure or field shall be most effectively exploited and the manner in which the proceeds deriving therefrom shall be apportioned."[15] This sort of agreement diminishes interest among private stakeholders in investing in the area because of the numerous

7. *See* CONG. RSCH. SERV., R42784, MARITIME TERRITORIAL AND EXCLUSIVE ECONOMIC ZONE (EEZ) DISPUTES INVOLVING CHINA: ISSUES FOR CONGRESS 2 n.3 (2017), https://www.everycrsreport.com/files/20171212_R42784_3a140db386644d1fb271aefd9856f9a2239c189b.pdf.

8. *See id.* at summary.

9. *See id.*

10. *See* Kennedy Cameron, Examining the Russian Federations claim to extend their Exclusive Economic Zone within the Arctic, UNIV. OF WASH.: THE HENRY M. JACKSON SCHOOL OF INT'L STUDIES (May 6, 2020), https://jsis.washington.edu/news/examining-the-russian-federations-claim-to-extend-their-exclusive-economic-zone-within-the-arctic [https://perma.cc/NH7R-WCPQ].

11. *See* Galip Dalay, *Turkey, Europe, and the Eastern Mediterranean: Charting a Way Out of the Current Deadlock*, BROOKINGS INSTITUTE (Jan. 28, 2021), https://www.brookings.edu/research/turkey-europe-and-the-eastern-mediterranean-charting-a-way-out-of-the-current-deadlock [https://perma.cc/JN2E-PPZY].

12. Nicholas A. Ioannides & Constantinos Yiallourides, *A Commentary on the Dispute Concerning the Maritime Delimitation in the Indian Ocean (Somalia v Kenya)*, EJIL: TALK!: BLOG OF THE EUROPEAN J. OF INT'L LAW (Oct. 22, 2021), https://www.ejiltalk.org/a-commentary-on-the-dispute-concerning-the-maritime-delimitation-in-the-indian-ocean-somalia-v-kenya [https://perma.cc/CU3R-T7QT].

13. Monjur Hasan et al., *Protracted Maritime Boundary Disputes and Maritime Laws*, 2 J. OF INT'L MAR. SAFETY, ENV'T AFFS., & SHIPPING 89, 89 (2019) ("When the [maritime boundary] dispute gets serious, [the parties] try to settle it according to different methods of the settlement, but in most of the cases, the parties of the dispute fail to reach an agreement on settlement.").

14. *Id*.

15. Agreement Between Sri Lanka and India on the Maritime Boundary Between the Two Countries in the Gulf of Mannar and the Bay of Bengal and Related Matters art. 6, India-Sri Lanka, Mar. 23, 1976, https://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/LKA-IND1976MB.PDF.

outstanding questions about which state has the definitive right to license the portion of the seabed in question. As outlined in more detail in Part V, certainty over property rights is essential to realizing an efficient outcome.

Another inefficient approach has been to resolve boundary disputes based on geometry rather than technological capacity and economic interest. Article 15 of UNCLOS calls for the delimitation of the territorial sea between states with opposite or adjacent coasts to be based on a median line made up of points "equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two states is measured."[16] Reliance on that article is an inefficient and fragile approach because states inevitably claim "jurisdiction to its own interest," regardless of whether the claim resides on the other side of an arbitrary line.[17] In other words, the state with a greater interest will likely find a way to act on that interest, regardless of what an agreement may say. Yet, the default resolution framework employed to resolve maritime boundary disputes does not factor in the magnitude and kind of interests among states.

Kenya and Somalia agreed in 2009 to settle a dispute over Somalia's continental shelf and EEZ based on Article 15.[18] This portion of the sea was believed to hold "large reserves of hydrocarbons which both states have been eager to exploit."[19] That agreement lasted for three years.[20] Somalia sought a new agreement after Kenya approved eight exploration licenses for offshore blocks in the Indian Ocean to foreign oil companies.[21] The International Court of Justice (ICJ) attempted to resolve the dispute.[22]

Kenya offered a slew of evidence to defend its actions.[23] The evidence is indicative of how the application of a geometric approach to solving maritime disputes often turns on what should be irrelevant factors. First, Kenya cited Somalia's failure to use military and political capital to contest Kenya's action as evidence in favor of their claim.[24] Alternatively phrased, Kenya thinks Somalia should be expected to repeatedly signal its interest in the disputed area. Second, Kenya described its own use of

16. United Nations Convention on the Law of the Sea art. 15, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

17. *See* Hasan et al., *supra* note 13, at 89.

18. *See* Ioannides & Yiallouride, *supra* note 12.

19. *Id.*

20. *Id.*

21. *Id.*

22. *See* Maritime Delimitation in the Indian Ocean (Som. v. Kenya), Judgment, (Oct. 12, 2021), https://www.icj-cij.org/public/files/case-related/161/161-20211012-JUD-01-00-EN.pdf.

23. *See id.* ¶ 35 (reviewing the positions of the parties).

24. *See id.* ¶¶ 36-89 (discussing whether Somalia acquiesced to the maritime boundary favored by Kenya).

political and military resources to assert its claims to the disputed territory.[25] In short, Kenya claimed to have incurred more transaction costs related to the territory than Somalia; therefore, Kenya had proven its superior claim to the territory. Coasian bargaining would frown upon this approach because of its inability to reach a definite conclusion and its incentivizing of wasteful transaction costs. In a win for reducing transaction costs, the ICJ rejected Kenya's claim because Somalia had not "clearly and consistently acquiesced to the maritime boundary claimed by Kenya."[26] Still, the decision illustrated the need for states to expend resources to make sure their claims don't lapse. Those expenditures are wasteful.

The ICJ later returned to the equidistance method to try to resolve the conflict with a greater degree of finality. It declined to deviate from this methodology because it did not find Kenya's insistence on incorporating economic and security factors into the line drawing exercise persuasive.[27] The use of geometric principles to resolve the conflict would be the most "equitable" in the mind of the ICJ. Equity in this context was based solely on the ratio of the disputed territory claimed by each of the parties.[28] The ICJ's ruling in this matter reinforced what had already been observed by international stakeholders: "Economic considerations lie at the heart of the continental shelf and EEZ concepts. Yet, such factors have not played, at least explicitly, a significant role in the delimitation of these zones."[29]

The application of property theory to resolve maritime disputes can generate greater welfare for the disputants and reduce their transaction costs. This is especially true in the context of the South China Sea. This paper proceeds in five parts. Part I discusses the facts of the South China Sea Dispute. Part II provides a summary of the current law of the sea and its shortfalls with respect to resolving the South China Sea Dispute. Part III summarizes how the principles at the heart of Coasian bargaining could resolve maritime territorial disputes with respect to deep-sea resources. Part IV outlines how advances in technology have historically altered the law of the sea and why modern advances require a similar alteration. Part V assesses the need for applying Coasian principles to resolve the South China Sea Dispute considering new economic and technological considerations.

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25. *See id*.

26. *Id.* ¶ 89.

27. *Id.* ¶¶ 156-60.

28. Maritime Delimitation in the Indian Ocean (Som. v. Kenya), Judgment, ¶¶ 175-77 (Oct. 12, 2021), https://www.icj-cij.org/public/files/case-related/161/161-20211012-JUD-01-00-EN.pdf.

29. Ioannides & Yiallouride, *supra* note 12.

I. FACTS OF THE SOUTH CHINA SEA DISPUTE

The South China Sea contains immense political and economic value, which has given rise to a dispute among the states bordering the South China Sea. The borders of the South China Sea engulf the territory from Singapore and the Strait of Malacca in the southwest to the Strait of Taiwan in the northeast.[30] The littoral states, including China, Taiwan, Vietnam, Brunei, Indonesia, Malaysia, and the Philippines, have conflicting claims over the territory.[31] Attempts by these states to exert control over the South China Sea map onto ancient and contemporary political disputes. Their efforts to safeguard their respective access to the South China Sea reflect the value of the substantial fisheries and, potentially, deep-sea resources in the Sea.[32] The political and economic importance of the South China Sea has drawn regional states, as well as states from outside of the contested region into the dispute.[33]

China has taken the most aggressive stance with respect to possession of the South China Sea. China regards nearly ninety percent of the South China Sea as residing within the nation's inland waters, territorial seas, and EEZ.[34] It also has claimed disputed land features, including the

30. U.S. ENERGY INFO. ADMIN., SOUTH CHINA SEA ANALYSIS BRIEF (Oct. 15, 2019), https://www.eia.gov/international/analysis/regions-of-interest/South_China_Sea [hereinafter EIA Report].

31. *See Territorial Disputes in the South China Sea*, COUNCIL ON FOREIGN RELS. (May 4, 2022), https://www.cfr.org/global-conflict-tracker/conflict/territorial-disputes-south-china-sea; *see also* INTERNATIONAL CRISIS GROUP, COMPETING VISIONS OF INTERNATIONAL ORDER IN THE SOUTH CHINA SEA 1 (2021) [hereinafter INTERNATIONAL CRISIS GROUP], https://www.crisisgroup.org/asia/north-east-asia/china/315-competing-visions-international-order-south-china-sea [https://perma.cc/V3K4-EQ3U] ("Although South East Asian claimants have conflicting claims with each other, the asymmetry in power between the People's Republic of China and the other claimants, and the broad scope of Beijing's assertion of sovereignty over most of the Sea, is the central feature of the disputes.").

32. *See* EIA Report, *supra* note 30 ("EIA estimates the South China Sea contains approximately 11 billion barrels of oil and 190 trillion cubic feet of natural gas in proved and probable reserves.").

33. The percentage attached to China's claim of the South China Sea varies. *Compare* Robert Delaney and Owen Churchill, *New US Report Dismisses Beijing's Claim to South China Sea 'Historical Rights'*, S. CHINA MORNING POST (Jan. 13, 2022), https://www.scmp.com/news/china/diplomacy/article/3163180/new-us-report-dismisses-beijings-claim-south-china-sea [https://perma.cc/ZHM6-G7NE] (listing the percentage of China's claim at eighty) *with* INTERNATIONAL CRISIS GROUP, *supra* note 31, at 5 (listing the percentage at eighty-five).

34. Oriana Skylar Mastro, *How China is Bending the Rules in the South China Sea*, THE INTERPRETER (Feb. 17, 2021), https://www.lowyinstitute.org/the-interpreter/how-china-bending-rules-south-china-sea.

Spratlys (also claimed, in part or in full, by Brunei, Malaysia, the Philippines, Taiwan, and Vietnam) and the Paracels (also claimed by Taiwan and Vietnam).[35] Chinese officials ground their claims in historic, legal, and geographic arguments. The government's historic use of a "nine-dash line" to outline the extent of its claim is perhaps the nation's most well-known and repeated argument.[36] These historic claims have been formally dismissed by an independent arbitral tribunal as "mostly incompatible" with UNCLOS.[37]

A ruling by the aforementioned tribunal, which was established under UNCLOS as one of several avenues for dispute resolution, made clear that China's attempts to bolster its expansive claims through artificial islands did not pass muster.[38] Furthermore, the tribunal declared as illegitimate China's demands on its South China Sea neighbors to give up their oil, gas, and fishery rights.[39] China initially regarded the ruling as non-binding and insignificant, though some observers speculate that the ruling has changed China's behavior in recent years with respect to the South China Sea.[40] Others, such as B.A. Hamzah, the director of the Centre for Defence and International Security Studies at the National Defence University of Malaysia, argue the alternative— suggesting that many of the littoral states have come to accept China's jurisdiction at sea, even though it conflicts with the tribunal's ruling and UNCLOS.[41] Regardless of China's informal response, its formal denial of the decision amounted to a failure to in "good faith comply with what it had agreed to when it ratified [UNCLOS][.]"[42]

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35. INTERNATIONAL CRISIS GROUP, *supra* note 31, at 1.

36. *See* Bill Hayton, *Two Years On, South China Sea Ruling Remains a Battleground for the Rules-Based Order*, CHATHAM HOUSE (July 11, 2018), https://www.chathamhouse.org/2018/07/two-years-south-china-sea-ruling-remains-battleground-rules-based-order [https://perma.cc/LZZ8-VMY8].

37. *Id.*

38. *Id.*

39. *Id.*

40. *See, e.g., id.*; *see also* Kardon, *supra* note 5, at 41 (summarizing that China's post-arbitration decision behavior included permitting Filipino fishermen to perform "traditional fishing activities" around Scarborough Shoal).

41. CONG. RSCH. SERV., R42784, U.S.-CHINA STRATEGIC COMPETITION IN SOUTH AND EAST CHINA SEAS: BACKGROUND AND ISSUES FOR CONGRESS 70 (2022), https://sgp.fas.org/crs/row/R42784.pdf [hereinafter CRS on SCS].

42. Andrea Ho, *Professor Robert Beckman on the Role of UNCLOS in Maritime Disputes*, GEORGETOWN J. INT'L AFFAIRS (May 6, 2021), https://gjia.georgetown.edu/2021/05/06/professor-robert-beckman-on-the-role-of-unclos-in-maritime-disputes [https://perma.cc/697K-TJKN].

The end result has been an undermining of UNCLOS and the stability it sought to provide.[43]

Years after the tribunal's decision, uncertainty and contestation still fill the South China Sea. Littoral states have continued to ready themselves in the event of a larger conflict in the area. Malaysia's Littoral Combat Ship (LSC) project serves as an example of states investing in their navies to increase their ability to defend their economic and political priorities.[44] The LSC project also reinforces the notion that keeping military technology up to date can have a major deterrent effect.[45] This notion was also on display when Vietnam purchased Kilo-class submarines from Russia to make China think twice before taking action in waters claimed by Vietnam.[46]

As these littoral states modernize, others have done the same to keep pace and to prepare themselves for confrontations in the South China Sea. Fear of sailing into the wrong territory continues to shape how littoral states think about missions as seemingly benign as research on how to reduce plastic pollution in the Sea. A joint research effort by the Philippines and Vietnam plans to avoid contested areas like the Paracels for fear of inciting a response among the various claimants.[47] This is an understandable fear. As recently as November 16, 2021, China blocked two Philippine boats attempting to restock an outpost on contested territory.[48] This sort of response more than five years after the tribunal decision indicates that the decision has not settled rights and boundaries in the South China Sea.

The absence of clear rights with respect to the extraction of deep-sea resources, specifically hydrocarbons, has denied the entire South China Sea community the ability to efficiently use those resources. This ambiguity has thwarted efforts to quantify the resources at stake, as well

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43. INTERNATIONAL CRISIS GROUP, *supra* note 31, at 10.

44. Tharishini Krishnan, *Why Must the Littoral Combat Ship Project in Malaysia Continue?*, ASIA MAR. TRANSPARENCY INITIATIVE (Jun. 8, 2021), https://amti.csis.org/why-must-the-littoral-combat-ship-project-in-malaysia-continue [https://perma.cc/8DTG-8AK6].

45. *Id.*

46. *Id.*

47. Vu Hai Dang, *Resumption of JOMRE-SCS: Practical Suggestions to Move Forward*, ASIA MAR. TRANSPARENCY INITIATIVE (Dec. 8, 2021), https://amti.csis.org/resumption-of-jomsre-scs-practical-suggestions-to-move-forward [https://perma.cc/BLL3-YSRT].

48. Lucio Blanco Pitlo III, *The Second Thomas Shoal Incident and the Reset in Philippine-U.S. Ties*, ASIA MAR. TRANSPARENCY INITIATIVE (Dec. 17, 2021), https://amti.csis.org/the-second-thomas-shoal-incident-and-the-reset-in-philippine-u-s-ties [https://perma.cc/NP3K-5CHY].

as, to extract those resources. The efficient management of these resources requires precise estimates of the value and location of the resources. Researchers speculate that as few as 2.5 billion and as many as 11 billion barrels of oil reserves exist beneath the South China Sea.[49] There's also a wide divergence in estimates of natural gas reserves in the area.[50] The South China Sea may also contain other undiscovered resources that, with an unclear level of investment, could prove profitable for states in the region.[51]

The cost of these resources going unexplored is present and growing. Several claimants to the South China Sea have the technological capacity to access many of the currently inaccessible and unexplored resources. Vietnam, Malaysia, and Brunei, for instance, have long relied on their offshore fuel reserves to power their economic development.[52] There's also significant and growing private interest in projects to exploit deep-sea resources in the region.[53] Advances in extractive technologies have attracted private companies to offshore reservoirs of these resources.

Successful extractive projects in other parts of the South China Sea further demonstrate the mounting opportunity costs of permitting contested areas to go unexplored and untapped. Thailand and Vietnam have collaborated to jointly develop certain areas of the Gulf of Thailand, despite some ongoing disputes.[54] Malaysia and Thailand have also partnered to develop a section of the Gulf of Thailand, though both countries have maintained their legal rights to the area in question.[55] Brunei and Malaysia are another example of two countries forming a successful joint exploration initiative after the resolution or deprioritization of their offshore territorial dispute.[56] The ability of these countries to prioritize mutually-beneficial development over their maritime boundary disputes has benefited their respective economies.[57] As technology continues to progress and makes the extraction of resources further from the coast possible, these states stand to benefit, if they're able

49. EIA Report, *supra* note 30.
50. *Id.*
51. *Id.*
52. *Id.*
53. *Id.*
54. *Id.*
55. *Id.*
56. *Id.*
57. *See* Sara McLaughlin Mitchell & Andrew P. Owsiak, *Judicialization of the Sea: Bargaining in the Shadow of UNCLOS,* 115 A.J.I.L. 579, 592 (2021) (noting Argentina and Uruguay as another example of two countries that managed to solve a maritime boundary dispute through bilateral negotiations).

to achieve a similar understanding with the full range of South China Sea claimants.[58]

Where conflict persists, though, exploration and extraction have either never been conducted or have been shut down. By way of example, China managed to stop the Philippines from conducting commercial drilling near the Reed Bank of the Spratly Islands,[59] an area that's arguably "[t]he greatest source of tension" because they are claimed "in their entirety by China, Taiwan, and Vietnam, and in part by the Philippines, Malaysia, and Vietnam."[60] China has also consistently contested Indonesian and Malaysian oil and gas activity in the South China Sea. Means of contestation include sending Chinese law enforcement boats to new drilling sites and conducting seabed surveys within the EEZ of the respective nations.[61] The cumulative effect of these sorts of challenges has "complicated the investment picture of oil and gas operators in Southeast Asia," according to the Asia Maritime Transparency Initiative.[62] China appears to oppose the involvement of any "external" companies in the South China Sea.[63] China's insistence on that policy has resulted in several international companies opting out of their agreements with other littoral countries.[64]

Despite several countries in the region having a high degree of technological capacity and a growing demand for exploration, China distinguishes itself as the state with the greatest capacity to explore and extract deep-sea resources. Its national oil companies have tremendous experience tapping into offshore oil and have made substantial investments in technology to reach deeper resources in riskier areas.[65] In May 2011, China completed construction of its most advanced deep-water oil drilling platform, but ongoing territorial disputes have prevented China

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58. *See generally* EIA Report, *supra* note 30 (noting that national oil companies have partnered with international companies to adopt new technologies capable of exploring and extracting deep-sea resources).

59. *See, e.g.*, *id.*

60. LYNN KUOK, HOW CHINA'S ACTIONS IN THE SOUTH CHINA SEA UNDERMINE THE RULE OF LAW 2 (2019).

61. *See generally Nervous Energy: China Targets New Indonesian, Malaysian Drilling*, ASIA MAR. TRANSPARENCY INITIATIVE (Nov. 12, 2021), https://amti.csis.org/nervous-energy-china-targets-new-indonesian-malaysian-drilling [https://perma.cc/NEV2-W99T] [hereinafter AMTI on New Drilling].

62. *Id*.

63. *See* CRS on SCS, *supra* note 41, at 70.

64. *See* AMTI on New Drilling, *supra* note 61 (detailing how Premier Oil "farmed out" its stake in a block to another company).

65. *See* EIA Report, *supra* note 30 ("[China National Offshore Oil Corporation] has the most offshore oil production and has invested the most in the sea.").

from realizing some of its exploratory and extractive goals.[66] Despite forming relationships with international companies and allocating those companies specific blocks of the South China Sea to conduct surveying and extractive activities, action in those blocks has been stalled—for example, China's dispute with Vietnam and the dearth of geologic information because of that dispute have blocked the start of those projects.[67]

The South China Sea conflict does not show signs of resolving itself. China continues to try to bolster its territorial claims while contesting those of others.[68] As briefly mentioned above, China has stepped up its efforts to prevent other littoral countries from emulating China's own tactics. When two Philippine civilian boats neared a Philippine outpost made up of a grounded tank landing ship to provide provisions, three Chinese coast guard vessels blocked those boats and water-cannoned them.[69] China has similarly protested efforts by Manila to upgrade facilities on a different, small island in the South China Sea.[70] After the tribunal's award, China also continued to threaten Vietnam. China reportedly threatened Vietnam numerous times in 2017 and 2018 in response to Vietnam sponsoring drilling operations in its EEZ.[71] Neither the Association of Southeast Asian Nations (ASEAN) nor the United States condemned China for those threats, further diminishing the likelihood of the tribunal's award or UNCLOS settling things down in the South China Sea.[72] Some states, including Taiwan, even went so far as to agree with China's refusal to accept the arbitration.[73]

A recently passed law, China's Maritime Traffic Safety Law (MTSL) suggests China's threats and challenges will continue. Though states argue

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66. *Id*.

67. *See id*; *see also* Tim Daiss, *All the Reasons ExxonMobil May Leave Vietnam*, ASIA TIMES (Sept. 17, 2019), https://asiatimes.com/2019/09/all-the-reasons-exxonmobil-may-leave-vietnam [https://perma.cc/H3TY-QUSJ].

68. *See e.g.*, Kardon, *supra* note 5, at 2 (ascribing to China an "intent to serve as an active agent of change within the international order.").

69. Pitlo, *supra* note 48; *see also* Laura Zhou, *South China Sea: Philippines Accuses China of 'Dangerous Challenges' Near Scarborough Shoal*, S. CHINA MORNING POST (May 5, 2021) (detailing how China blocked two coast guard patrols from the Philippines en route to the highly-contested Scarborough Shoal in the South China Sea), https://www.scmp.com/news/china/diplomacy/article/3132333/south-china-sea-philippines-accuses-china-dangerous-challenges [https://perma.cc/N7E9-FM2G].

70. Pitlo, *supra* note 48.

71. KUOK, *supra* note 60, at 4.

72. *See id*.

73. Kardon, *supra* note 5, at 30 (listing "Montenegro, Pakistan, Russia, Sudan, Taiwan, and Vanuatu" as such states).

that China incorrectly interprets the meaning of "freedom of navigation," as defined by UNCLOS, China codified their own, unique interpretation in the MTSL.[74] Under this interpretation, certain categories of foreign vessels must provide China with certain information when sailing through and berthing in the state's pilotage zones.[75] Importantly, littoral states are unsure of the boundaries of those zones, granting China discretion in deciding when it wants to find certain ships in violation of the law.[76] "Chinese domestic legislation that goes beyond what is allowed by international law" should give littoral states and other stakeholders cause for concern, according to Dr. Nguyen Thanh Trung, director of the Saigon Center for International Studies, and Le Ngoc Khanh Ngan, a research fellow at the Center.[77] They warn that such laws create an opportunity for China "to advance its territorial goals through coercive means."[78]

Meanwhile, several of the other claimants have seen their demand for accessing new resources elsewhere in the South China Sea grow, increasing the odds of confrontation. Brunei's government has signaled an interest in new exploration in light of its older fields declining in the production of oil and gas.[79] A boom in domestic demand for oil and gas in Indonesia has spurred that government to consider forming joint exploration initiatives with South China Sea neighbors.[80] This surge in demand will likely continue as the littoral countries develop economically and look to participate in growing markets. If, for example, any extensive stores of minerals necessary for battery development are discovered in the South China Sea, then the littoral countries will seek to pounce on the opportunity to bring those minerals to market, an extractive activity that would grow and diversify their economy. China's demand is also reaching new heights and is projected to become the top liquefied natural gas importer in the world within just a few years.[81]

The conflict in Ukraine and the sanctions imposed on Russia as a result may push littoral states to acquiescence to China's desire to control the

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74. Nguyen Thanh Trung & Le Ngoc Khanh Ngan, *Codifying Waters and Reshaping Orders: China's Strategy for Dominating the South China Sea*, ASIA MAR. TRANSPARENCY INITIATIVE (Sept. 27, 2021), https://amti.csis.org/codifying-waters-and-reshaping-orders-chinas-strategy-for-dominating-the-south-china-sea [https://perma.cc/CBU8-B5W8].

75. *Id*.

76. *Id*.

77. *Id*.

78. *Id*.

79. *See* EIA Report, *supra* note 30.

80. *Id*.

81. *See* Daiss, *supra* note 67.

development of such resources. Though China has thwarted hydrocarbon projects in the region involving Western powers, it has "tolerated" Russia partnering with littoral states to tap into hydrocarbon stores.[82] If Russia can no longer assist states to access those resources, then those states may turn to China to fill the gap. China has taken steps to make sure that few other alternatives exist.

Informal arrangements in which China permitted states to skirt close to the nine-dash line and extract deep-sea resources no longer appear tenable in this competitive oil and gas market.[83] Years back, Vietnam felt secure moving forward on a project with ExxonMobil that was close to, but outside of the nine-dash line because officials thought they had reached an informal understanding with their Chinese counterparts.[84] The deal specified that they would not interfere with activities of the other state so long as those activities were on their respective sides of a hypothetical median line.[85] Yet, that arrangement has not stopped China from putting pressure on Hanoi and Exxon, complicating the progress on Exxon's project and continuing to scare away potential investors from the area.[86] China's aversion to any project involving outside companies and states is not new. Back in 2007, China pushed three U.S. companies, Exxon, Chevron, and ConocoPhillips, to suspend their agreements on production sharing with PetroVietnam.[87]

China may abide by informal arrangements so long they don't involve parties outside of the South China Sea, even if that means recognizing another state's maritime boundaries. Back in 2018, for instance, China and the Philippines agreed to a Memorandum of Understanding on

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82. Richard Javad Heydarian, *Fallout: Ukraine Crisis Upends Russia's Role in the South China Sea*, ASIA MAR. TRANSPARENCY INITIATIVE (Mar. 25, 2022), https://amti.csis.org/fallout-ukraine-crisis-upends-russias-role-in-the-south-china-sea [https://perma.cc/7DDH-ZDNE]. Vietnam, for example, has benefited from Russian assistance with deep-sea resource extraction. *See, e.g.*, Tomoya Onishi, *Vietnam and Russia Expand Joint South China Sea Gas Projects*, NIKKEI ASIA (Nov. 30, 2018), https://asia.nikkei.com/Politics/Vietnam-and-Russia-expand-joint-South-China-Sea-gas-projects [https://perma.cc/YN7D-Q77C].

83. *See* International Crisis Group, *supra* note 31, at 13-14 (enumerating examples of China preventing oil and gas extraction in the South China Sea).

84. *See* Daiss, *supra* note 67.

85. *Id*. (interviewing University of New South Wales emeritus professor and Vietnam and South China Sea expert Carl Thayer).

86. Helen Clark, *ExxonMobil Stares Down China for Vietnam Gas*, ASIA TIMES (Dec. 7, 2021), https://asiatimes.com/2021/12/exxonmobil-stares-down-china-for-vietnam-gas [https://perma.cc/2B3S-ZYPL].

87. KUOK, *supra* note 60, at 6.

Cooperation on Oil and Gas Development.[88] The potential structure of the agreement could serve as a template for future agreements: "a Chinese company providing services and the Philippines paying it for work done."[89] Observers speculate that the final framework may include China recognizing the Philippines' sovereign rights over its claimed EEZ.[90] But even in such cases, the efficient exploitation of deep-sea resources is unlikely, in part because of the instability associated with the status quo in the South China Sea.[91] Years later, no framework had been finalized and analysts doubt any joint production will occur soon.[92] A Chinese preference for bilateral arrangements also may have inspired the creation of a bilateral consultation mechanism with Malaysia.[93]

A series of bilateral agreements or even a regional agreement among South China Sea states may not live up to the expectations of external stakeholders and may further undermine UNCLOS. Yet, China appears eager to perpetuate and make real a growing narrative that the region's security issues can be and are being resolved internally, with no need for external stakeholders.[94] China's chief priority is to prevent encirclement, which means exercising military control within the "first island chain," which stretches "north to south from the Kuril Islands, past Japan, the Ryukyus, Taiwan, the Philippines, Borneo and the Natuana Islands."[95] Littoral states may have accepted that China will not stop until that priority has been met and may also share a preference for keeping things "in the neighborhood." Malaysia has signaled an interest in reducing the participation of external states. Their officials have preferred to let

88. Pia Ranada, *DOCUMENT: Oil, Gas Development Deal Between Philippines, China*, RAPPLER (Nov. 26, 2018), https://www.rappler.com/nation/217559-memorandum-understanding-philippines-china-oil-gas-development-deal [https://perma.cc/KB5B-F4MK].

89. *See* KUOK, *supra* note 60, at 4.

90. *See id*.

91. *See, e.g.,* Amanda Battersby, *Last Throw of the Dice for Philippines Exploration?*, UPSTREAM ONLINE (Feb. 11, 2022), https://www.upstreamonline.com/opinion/last-throw-of-the-dice-for-philippines-exploration-/2-1-1165438 [https://perma.cc/AE6S-RZP4].

92. *See* Rommel C. Banlaoi, *South China Sea: China, Philippines Must Renew Push on Oil and Gas Cooperation as Pathway to Peace*, S. CHINA MORNING POST (July 14, 2021), https://www.scmp.com/comment/opinion/article/3140869/south-china-sea-china-philippines-must-renew-push-oil-and-gas [https://perma.cc/86LD-ZPNH].

93. KUOK, *supra* note 60, at 7 (noting this arrangement was not premised on any sort of resolution of maritime boundaries).

94. *See id*.

95. International Crisis Group, *supra* note 31, at 4.

ASEAN resolve disputes[96] and for external states to keep their navies from unnecessarily patrolling the South China Sea.[97] But an internally negotiated resolution presents a trade-off: a resolution, regardless of which laws and processes generate that resolution, could provide littoral states with the stability necessary to invest in and exploit their South China Sea claims; however, if international law and processes do not play a role in that resolution, then it may become a habit to ignore such law and processes in the resolution of future internal *and external* conflicts.

The continued economic, political, and military uncertainty in the South China Sea increases the need for a legal framework to bring stability to the region. In particular, as states become more concerned about their energy security, they may be more willing to enforce their respective claims to hydrocarbon resources—absent clarity around maritime boundaries, extraction rights, and freedom of navigation—and such enforcement efforts could develop into serious conflicts.[98] Negotiations on a Code of Conduct (COC) for the South China Sea have not progressed in recent years.[99] It's unlikely that progress will come soon. The multilateral proceedings have been bogged down by difficult questions related to the scope of the agreement, the duties and rights of each state, and the involvement of third parties.[100] Additionally, observers point out that the COC negotiations have to touch on one of the trickiest issues: fostering compliance.[101] Absent a meaningful enforcement mechanism, any COC will likely not resolve the issues at the heart of the South China Sea

96. *See* Tashny Sukumaran, *How Will Malaysia and China's Maritime Consultation Mechanism Affect the South China Sea Dispute?*, S. CHINA MORNING POST (Sept. 22, 2019), https://www.scmp.com/week-asia/explained/article/3029732/how-will-malaysia-and-chinas-maritime-consultation-mechanism?module=perpetual_scroll_0&pgtype=article&campaign=3029732 [https://perma.cc/9JLA-PDE4].

97. *See generally* Catherine Wong, *South China Sea 'Likely to Top Agenda' When Malaysian Foreign Minister Visits Beijing Next Week*, S. CHINA MORNING POST (Sept. 6, 2019), https://www.scmp.com/news/china/diplomacy/article/3026081/south-china-sea-likely-top-agenda-when-malaysian-foreign [https://perma.cc/B9QJ-YKWD].

98. *See, e.g.,* Banlaoi, *supra* note 92 (describing Vietnam's concerns about power shortages and inadequate energy security).

99. Vu Hai Dang, *The Mediterranean's Compliance Committee: A Model for the South China Sea?*, ASIA MAR. TRANSPARENCY INITIATIVE (Aug. 25, 2021), https://amti.csis.org/the-mediterraneans-compliance-committee-a-model-for-the-south-china-sea [https://perma.cc/NC55-XTSR].

100. *Id*.

101. *Id*.

conflict.[102] The next Part discusses UNCLOS, which has had a limited role in resolving South China Sea issues precisely because of its dearth of compliance mechanisms.

II. LAW OF THE SEA TREATY

This Part briefly reviews portions of UNCLOS before assessing the role that UNCLOS has played in the South China Sea. Most nations are signatories to UNCLOS.[103] The nearly universal acceptance of UNCLOS has resulted in most of its provisions being considered a part of customary international law; therefore, these provisions are applicable to all countries.[104] Yet, UNCLOS and its dispute mechanisms have had a marginal role in resolving conflicts in the South China Sea. Many of the littoral states have opted to instead work bilaterally to reach agreements or simply to table maritime disputes for another time.

A. Description of UNCLOS

UNCLOS specifies the rights available to nations over the waters extending seaward from their respective coasts. As the distance from the coastal state increases, UNCLOS affords nations fewer rights. This aligns with historic rationales for different Law of the Sea regimes: as nations have expanded their ability to exclusively control portions of the sea, they have claimed the right to exercise that ability and slowly incorporated those claims into law.

States may exercise the most rights in their territorial sea, which can extend as far as twelve nautical miles from the baselines determined by the shape of the state's coast.[105] In this zone, states have sovereignty over the sea itself, the airspace above the sea, and bed and subsoil.[106] The law governing the determination of baselines is convoluted and complex.

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102. *See id*. (citing the 2002 Declaration on the Conduct of Parties in the South China Sea as an example of a "toothless instrument" lacking an adequate compliance mechanism).

103. *See* U.N Div. for Ocean Affs. & the L. of the Sea, Chronological Lists of Ratifications of, Accessions and Successions to the Convention and the Related Agreements (2019), https://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm [https://perma.cc/GUF9-B7R8].

104. *See* Jon L. Jacobson, *Symposium: Law of the Sea: International Fisheries Law in the Year 2010*, 45 LA. L. REV. 1161, 1178 (1995) (outlining the United States' position on UNCLOS as expressing customary international law).

105. UNCLOS, *supra* note 16, at art. 3.

106. *Id*. at art. 2, ¶¶ 1-2.

Baselines may vary based on the extent of indentations along a coastline, the presence of a delta, the "general direction of the coast," the location of the low-water line, and the location of the territorial seas and EEZ of other nations.[107] To further complicate matters, coastal states are permitted discretion in the selection of the best method to determine their baselines.[108]

UNCLOS's drafters anticipated that this discretion would result in overlapping claims between opposite and adjacent states. Article 15 specifies that such claims should be resolved by drawing a median line "every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two states is measured."[109] But, this remedy is not mandated. If "by reason of historic title or other special circumstances" delimitation must be done in an alternative manner, then states may develop their own resolution.[110] Reefs may generate territorial sea claims.[111]

States may exercise less control over their EEZ, which is the "area beyond and adjacent to the territorial sea,"[112] not to extend more than 200 miles from the baselines used to establish the territorial sea.[113] Despite not having complete sovereignty over this zone, the coastal state still possesses sovereign rights "for the purpose of exploring and exploiting, conserving and managing the natural resources . . . of the waters superjacent to the seabed and of the seabed and its subsoil[.]"[114] They also have jurisdiction over "the establishment and use of artificial islands, installations and structures" in the EEZ.[115] States have similar rights in their continental shelf, a zone that includes the seabed and subsoil of the submarine areas beyond the coastal state's territorial sea through the natural prolongation of its terrestrial territory to the outer edge of the continental margin.[116] This zone cannot stretch beyond 350 nautical miles from the state's coast or 100 nautical miles from a line connecting the depth of 2,500 meters.[117]

The extent to which a state can manipulate the natural environment depends on the zone in which that activity occurs. Coastal states are

107. *Id*. at art. 7, ¶¶ 1-6.
108. *Id*. at art. 14.
109. *Id*. at art. 14.
110. *Id*.
111. *Id.* at art. 6.
112. *Id*. at art. 55.
113. *Id*. at art. 57.
114. *Id*. at art. 56, ¶ 1(a).
115. *Id*. at art. 56, ¶ 1(b)(1).
116. *Id*. at art. 76, ¶ 1.
117. *Id.* at art. 76, ¶ 5.

permitted to "construct and to authorize and regulate the construction, operation and use of: (a) artificial islands; (b) installations and structures for the purposes provided in article 56 and other economic purposes; (c) installations and structures which may interfere with the exercise of rights of the coastal State in the [EEZ]."[118] This permission is conditional on the coastal state providing "[d]ue notice" of the construction of any such islands, installations, or structures.[119] But, any of these developments do not come with a territorial sea or EEZ claim of their own nor do they affect the delimitation of the coastal state's territorial sea, EEZ, or continental shelf.[120] In this zone, all states are entitled to freedom of navigation and flight path rights.[121] In the event that a state goes beyond those freedoms, UNCLOS provides coastal states with means to enforce their EEZ claims, such as through judicial proceedings.[122]

Again, in anticipation of conflicts over EEZ, the UNCLOS drafters encouraged states to settle conflicts "regarding the attribution of rights and jurisdiction in the [EEZ]" on "the basis of equity and in light of all of the relevant circumstances[.]"[123] In the event that the states cannot reach an agreement, UNCLOS requires that they submit the dispute to one of several courts or tribunals to render a binding resolution.[124] Note that the majority of landmasses, reefs, and strategic waterways in dispute in the South China Sea reside inside of the EEZ of one or more of the littoral countries.[125]

On the high seas, the zone beyond the EEZ and continental shelf, the coastal state is no longer relevant because "[t]he high seas are open to all States."[126] The seabed outside of national jurisdiction constitutes "the Area," in which deep-sea resources must be developed with the common heritage of mankind in mind.[127] All states have the freedom to construct artificial islands in the high seas, but they cannot claim jurisdiction over such structures.[128] Scholars, such as Vu Hai Dang, a Senior Research Fellow in Ocean Law and Policy at the Centre for International Law,

118. *Id*. at art. 60, ¶ 1(a)-(c).
119. *Id*. at art. 60, ¶ 3.
120. *Id*. at art. 60, ¶ 8.
121. *Id*. at arts. 58, 87.
122. *Id*. at art. 73.
123. UNCLOS, *supra* note 16, at art. 59.
124. *Id*. at art. 74, ¶ 2; *see generally* UNCLOS, *supra* note 16, at Part XV.
125. *See* Dustin E. Wallace, *An Analysis of Chinese Maritime Claims in the South China Sea*, 63 NAVAL L. REV. 128, 140 (2014).
126. UNCLOS, *supra* note 16, at art. 87.
127. *Id*. at art. 150(i).
128. *Id*. at art. 87, ¶ 1(d).

National University of Singapore, interpret the 2016 arbitral tribunal decision in the South China Sea case as creating a "pocket of high sea of the South China Sea located between the [EEZ] of Brunei, Malaysia, the Philippines, and Vietnam."[129] If states, both in the South China Sea community and abroad, came to share this interpretation, then a lot more extensive (and surely contested) activities could legally take place in that pocket.

UNCLOS has specific definitions for islands, rocks, and reefs. The rights and obligations afforded a coastal state depend on which definition best aligns with the area in question. Islands carry the same rights as any other piece of coastal land because a state can establish territorial sea claims as well as EEZ claims based on that area.[130] Two factors distinguish an island from a rock: the extent to which high tide submerges the area and ability of the area to sustain human habitation. An island stays above water at high tide and has a natural origin, meaning that it's connected to the seafloor by means of the natural accretion of sand, rock, and other materials.[131] Rocks cannot sustain a human population and are entitled only to a twelve nautical mile territorial sea, but not an EEZ.[132]

Islands with "fringing reefs" come with distinct rules: the baseline for delineating the territorial sea must follow the seaward side of the low-water line of the reef.[133] This rule results in ambiguity, though, because Article 6 does not specify the distance that can exist between an island and seaward low-water line used to determine its territorial waters.[134] This ambiguity has manifested in South China Sea disputes as states attempt to use barrier reefs distant from the actual island itself as the basis for their maritime boundaries, leading to an expansion of their territorial claims.[135]

B. UNCLOS and the South China Sea

All claimants to the South China Sea are parties to UNCLOS.[136] Yet, UNCLOS only partially applies to some of the core issues in the South

129. Dang, *supra* note 47.

130. *See* Wallace, *supra* note 125, at 141.

131. UNCLOS, *supra* note 16, at art. 121, ¶ 1.

132. *Id.* ¶ 3.

133. *Id*. at art. 6.

134. *Id*.

135. Kevin Leddy, *Competing Claims: The Developing Role of International Law and Unilateral Challenges to Maritime Claims in the South China Sea*, 54 VAND. J. TRANSNAT'L L. 785, 797 (2021).

136. *United Nations Convention on the Law of the Sea*, U.N. TREATY COLLECTION, https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-

China Sea. UNCLOS has no jurisdiction over territorial disputes.[137] Nor do its arbitral bodies have any jurisdiction over questions of territorial sovereignty.[138] Where UNCLOS does apply, such as in disputes over the delimitation of territorial seas and EEZ, the ambiguous resolution mechanisms have rendered the regime relatively ineffective. The littoral countries can all point to UNCLOS and defend their respective claims as legally permissible. For that reason, none of the littoral states can definitively claim exclusive legal control over any part of the contested area. In the absence of enforceable legal rights to territory, physical possession of the territory becomes more important.

The extensive efforts of South China Sea states to build artificial islands and claim reefs and shoals reflect a desire to exercise exclusive control over disputed territories. Though these claims may not confer any new rights under UNCLOS, they can increase the ability of the state to exert greater control over the neighboring sea.[139] The value of territorial control within a state's EEZ may explain why the Philippines contested China's reclamation activities on Mischief Reef. The tribunal adjudicating the matter declared that China's reclamation efforts amounted to the creation of an artificial island.[140] China lacked the right to construct artificial islands in the area because the Reef resided within the EEZ of the Philippines.[141] The tribunal attempted to dissuade China and others from hoping that artificial additions to reefs submerged during high tide could eventually be given the status as an island, to which territorial sea claims would attach. Dr. Imogen Saunders summarizes that the tribunal went beyond the text of UNCLOS when it declared that "[a] low-tide elevation will remain a low-tide elevation under the Convention, regardless of the scale of the island or installation built atop it."[142] This decision to venture from the text of the Convention created an "unresolved contradiction" likely to give rise to more artificial island building.[143]

6&chapter=21&Temp=mtdsg3&clang=_en [https://perma.cc/T276-NE3M] (last accessed Nov. 17, 2022).

137. *See generally* Dr. Imogen Saunders, *Artificial Islands and Territory in International Law*, 52 VAND. J. TRANSNAT'L L. 643 (2019).

138. *See* UNCLOS, *supra* note 16, at Part XV, art. 286 (specifying that an arbitral body can rule on the "interpretation or application" of the Convention).

139. Saunders, *supra* note 137, at 650-51.

140. In the Matter of the South China Sea Arbitration (Phil. v. China) at 42, ¶ 14(d), Award (Perm. Ct. Arb. 2016), https://pcacases.com/web/sendAttach/2086 [https://perma.cc/W6A6-54ZZ] [hereinafter, "South China Sea Arbitration"].

141. *Id*. at 462, ¶ 1177.

142. *See* Saunders, *supra* note 137, at 665 (quoting South China Sea Arbitration, *supra note* 140, at 131).

143. *See id*. at 666.

The tribunal's decision also relied on a legal fiction that may undermine UNCLOS as artificial islands become a military and political necessity, per Reece Lewis, Lecturer in Law at Cardiff University.[144] To define the features in question, the tribunal leaned on the fiction of regarding the feature as it was, not as it is currently.[145] In their ideal form, legal fictions "rectify . . . an illogical formal adherence to the written rule in exchange for a more meaningful application of the law by giving effect to meaning rather than form."[146]

In this case, the tribunal set a dangerous precedent by advancing a deleterious fiction. The tribunal acknowledged that "in some cases, it would no longer be able to observe the original status of the feature [in question],"[147] but made that sort of analysis the basis of the rule announced in the South China Sea case, in which the summaries of how rocks looked to sailors in 1936 informed some of their conclusions.[148] So the tribunal effectively decided to prioritize "old maritime surveys and charts"[149] when analyzing features and to "completely ignore . . . the effect of [potentially] undeniable large-scale transformation[s] of . . . features."[150] In other words, as summarized by Lewis, "[t]o practically implement the Tribunal's fiction requires the application of imaginary historic baselines, which could, as recognized by the Tribunal, be rendered guesswork."[151] Though the tribunal's decision only applied to the issues between the Philippines and China,[152] the rule set forth, if applied elsewhere, is especially problematic in light of the fact that artificial island construction will become more likely as technology progresses and as climate change forces states to build artificial islands to save their people.[153]

UNCLOS was written at a time when the formation of permanent "made land" that was capable of supporting life and much more was not technologically feasible. That is why even individuals, such as Dr.

144. *See generally* Reece Lewis, *International Fictions: Lessons from the South China Sea Award*, 11 ASIAN J. OF INT'L LAW 261 (2021).

145. *Id*. at *3.

146. *Id*. at *2.

147. South China Sea Arbitration, *supra* note 140, at ¶ 306.

148. *Id*. at ¶ 378.

149. *Id*.

150. *See* Lewis, *supra* note 144, at *13.

151. *Id*. at *19.

152. *See generally* South China Sea Arbitration, *supra* note 140.

153. *See* Michael Gagain, *Climate Change, Sea Level Rise, and Artificial Islands: Saving the Maldives' Statehood and Maritime Claims Through the 'Constitution of the Oceans'*, 23 COLO. J. INT'L ENVTL. L. & POL'Y 77, 83 (2012) ("[T]he current legal regime of islands is insufficient to address this contemporary use of artificial island [to retain the sovereignty of nations facing climate extinction].").

Saunders, who read UNCLOS to unequivocally deny any maritime delimitation effects from artificial islands have to concede "that where dredging operations or the like result in the formation of [such permanent islands] the coast of the state and its territorial waters [should be] extended accordingly."[154] Yet, the tribunal relied on the sort of historic charts and claims that it said failed to bolster China's arguments to determine the proper classification of the rocks and reefs that underwent "astonishing" transformation by China.[155] The tribunal's lack of clarity about the "rights, freedoms, and obligations that states have over zones that may or may not be generated by" additions to rocks and reefs further complicated the application of the baseline regime under UNCLOS,[156] and, consequently, nudged states to find other ways to shore up their claims. Beyond this ambiguity, the impracticality of the tribunal's decision may spur China and others to regard it as inapplicable to modern maritime disputes. The tribunal's decision set forth a "demanding new test for determining the status of islands" that may set an impossibly high bar for designating an island given that even China's "impressive" facilities built atop submerged features failed to qualify as an island.[157] Such a high (and perhaps unreachable) bar may result in UNCLOS becoming further detached from reality.

The fact that China has largely ignored that decision and continued to upgrade its facilities at Mischief Reef likewise testifies to the value of having territorial control over areas with conflicting legal claims.[158] Reactions from members of the international community likewise reveal the value of control over such artificial islands, whether they can generate territorial sea claims. The United States and Australia, for instance, have

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154. Saunders, *supra* note 137, at 661 (citing Phillip C. Jessup, *The Law of Territorial Waters and Maritime Jurisdictions* 69 (1970)).

155. Lewis, *supra* note 144; *see also* Adam W. Kohl, *China's Artificial Island Building Campaign in the South China Sea: Implications for the Reform of the United Nations Convention on the Law of the Sea*, 122 DICK. L. REV. 917, 922-23 (2018) ("China has claimed sovereign control over all islands and waters within the South China Sea on the basis of its 2,000-year history of having 'continuously, peacefully and effectively exercised sovereignty and jurisdiction over them.' This claim is represented by the distinctive 'nine-dash line' drawn by Chinese officials on a map depicting the greater South China Sea area.").

156. Lewis, *supra* note 144, at *20.

157. Kardon, *supra* note 5, at 32-33.

158. *See* Saunders, *supra* note 137, at 665; *see also* Mitchell & Owsiak, *supra* note 57, at 581 (noting that just 29% of ratifying states, "recognize the jurisdiction of ITLOS, the ICJ, Annex VII arbitration, or Annex VIII arbitration for compulsory dispute settlement," which indicates China may not be the only state to contest rulings by the dispute resolution bodies in UNCLOS).

conducted air and sea freedom of navigation operations near China's artificial islands.[159] These operations show that the international community may have little faith in the ability of UNCLOS to govern behavior and that international norms have moved beyond the confines of the Convention.[160] Dr. Saunders warns that if adjudicatory bodies continue to interpret UNCLOS as regarding low-tide elevation territories as not-islands—regardless of whether reclamation efforts have put it permanently above the water line—then "[i]nternational law [may] become a fiction, irrelevant to what is actually happening in the world."[161]

There's evidence that UNCLOS has already become irrelevant in the South China Sea. Observers have noted that China's willingness to buck UNCLOS, and the tribunal's determination has made it an open question if "UNCLOS has the teeth to effectively resolve complex and heated disputes" in the South China Sea.[162] Actions by littoral states suggest not. They seem to have already moved to a post-UNCLOS conception of how best to protect their claims in the South China Sea. As described above, several pairs of the littoral states have ignored going through UNCLOS-specified means to resolve maritime boundary disputes and have instead formed joint ventures based on economic interests more so than lines in the sea. States other than China have likewise embarked on building out artificial islands, despite the tribunal interpreting UNCLOS to assign no value to these efforts in terms of establishing territorial sea and EEZ claims.[163]

Vietnam, for instance, has reclaimed nearly sixteen hectares of land in the South China Sea.[164] Of those hectares, approximately six have been used to bolster a natural area that now has an airstrip, hangers, and a protected harbor.[165] Vietnam has also invested in "pillbox-like fortifications on undersea reefs" and has been expanding or upgrading many of those structures since 2013.[166] Officials in Vietnam "consider the banks part of its continental shelf" and justify these efforts using Article

159. *Id.* at 674-75.

160. KUOK, *supra* note 60, at 1 (remarking that after the arbitral tribunal's ruling, "[i]nternational pressure on China has been inconsistent[.]").

161. Saunders, *supra* note 137, at 677.

162. Kohl, *supra* note 155, at 936.

163. *See* Rachel Zhang, *South China Sea: What are Rival Claimants Building on Islands and Reefs?*, S. CHINA MORNING POST (Mar. 7, 2021), https://www.scmp.com/news/china/diplomacy/article/3124309/south-china-sea-what-are-rival-claimants-building-islands-and [https://perma.cc/K4YX-S99X] (describing the artificial islands being built by China, Vietnam, and the Philippines).

164. *Id*.

165. *Id*.

166. *Id*.

80 of UNCLOS, which permits the construction of artificial islands by a coastal state in their continental shelf.[167] The Philippines have also built shelters and other structures in contested areas of the Sea.[168] The investments these nations continue to make in artificial islands also support the idea that they have moved beyond UNCLOS and operate on the idea that if a state can exert effective control over an artificial island then it will have been presumed to have title to that territory.[169]

China's conception of the law of the sea emerging from historical rights, customary international law, and UNCLOS further diminishes the odds of UNCLOS having a heavy hand in resolving issues in the South China Sea. In recognition of UNCLOS not covering questions of territorial sovereignty, China has framed South China Sea disputes as unequivocal matters of territorial sovereignty that ought to turn on historical claims and be resolved "through friendly consultations and negotiations by [the] sovereign states directly concerned . . . ."[170] China has also taken methodical steps to limit the application of UNCLOS to its affairs.[171] For instance, as far back as 1996, China declared in its UNCLOS signing statement that it preserved several reservations with respect to the Convention's dispute resolution procedures.[172] It has since offered additional statements about its preference for settling "international disputes properly through negotiation, dialogue and consultation."[173] On the whole, China's actions and statements have made clear that it has a "jealous regard for sovereign prerogatives . . . ."[174] It steadfastly maintains that other sources of international law, such as historical usage, permit China to act in ways that may undermine "the basic intent and purposes of UNCLOS."[175] This is especially true of China's treatment of the EEZ

167. *Id.*; *see* UNCLOS, *supra* note 16, at art. 80.

168. Zhang, *supra* note 163.

169. *See* Saunders, *supra* note 137, at 678; *see also* Zhang, *supra* note 163.

170. *See* Kardon, *supra* note 5, at 23 (quoting an agreement between the Philippines and China as an example of China's preference for resolving territorial disputes).

171. *See id.* at 7 (noting that the "PRC has never relinquished its extra-UNCLOS claims, and has, in fact, augmented them since ratifying.").

172. *See Declarations and Statements*, U.N. DIV. FOR OCEAN AFFS. AND THE LAW OF THE SEA, (April 4, 2022), http://www.un.org/depts/los/convention_agreements/convention_declarations.htm#China Uponratification [https://perma.cc/P6VH-739N].

173. Wang Min, H.E. Ambassador, From Chinese Mission to the United Nations: Address Before the 68th Session of the UN General Assembly (Oct. 10, 2013), http://www.fmprc.gov.cn/mfa_eng/wjb_663304/zwjg _665342/zwbd_665378/t108 7085.shtml [https://perma.cc/MK9Y-NPWY].

174. Kardon, *supra* note 5, at 13.

175. *Id*. at 10.

regime established by UNCLOS. China's conception of international law means it has no problem depriving "all of the other coastal states in the South China Sea of EEZ resource rights and jurisdiction."[176] Any sustained and efficient exploitation of undersea resources in the region, then, will likely need China's blessing.

III. ECONOMIC ANALYSIS OF TERRITORIAL POSSESSIONS IN THE SEAS

In theory, UNCLOS enables states to bargain more efficiently and effectively by reducing the range of behaviors that states will exhibit and outcomes that the international community will accept.[177] It's true generally that UNCLOS has resulted in states claiming a more common range of entitlement limits, adopting similarly sized territorial seas, EEZ, etc., which has reduced the transaction costs associated with protecting those claims.[178] However, in specific settings such as the South China Sea, UNCLOS has increased uncertainty due to varied interpretations of the Convention and limited means to enforce claims that result from those interpretations. UNCLOS gave states in the region a new forum to contest other's claims. But the resolution of contestations derived from UNCLOS lack the necessary finality to reduce the transaction costs incurred by the conflicting parties.

It is also generally true that international courts can lean on UNCLOS to clarify "definitions, principles, rights, and obligations" and, as a result, foster "a common understanding of the facts and how to choose among the multiple available [resolutions]."[179] But that general truth, again, does not apply in the South China Sea, where parties to a dispute have granted wildly different levels of authority to international courts. In this region, the International Tribunal for the Law of the Sea (ITLOS), the ICJ, and other dispute resolution bodies outlined in UNCLOS may "identify the party that violated the law and explain how and why the behavior constitutes a violation," but these bodies have yet to increase the reputational costs of violating their judgments to a sufficient degree as required to change the behavior of states.[180]

This Part first explains the principles of Coasian bargaining before using those principles to understand why states have focused on establishing territorial control rather than enforcing UNCLOS as a means to reach stable outcomes in light of maritime disputes.

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176. *Id.*
177. *See* Mitchell & Owsiak, *supra* note 57, at 598.
178. *Id*.
179. *Id*.
180. *Id.* at 598-99.

A. Background on Coasian Bargaining

Coasian bargaining, named for Ronald Coase, requires two conditions for an efficient outcome: complete property rights and low or zero transaction costs.[181] If these conditions are met, then bargaining within that market will result in an efficient equilibrium, regardless of the initial distribution of the right in question. In some conditions, even where the necessary conditions for Coasian bargaining are met, the market can be unstable because there are too many players involved in the market.[182] The more players there are, the less certain any one player may be about the share of surplus they might receive in a transaction.[183] That indeterminacy can prevent parties from concluding any bargains at all.[184] This section outlines the uncertainty of rights in the South China Sea and ideas on how to reduce transaction costs in negotiations related to those rights.

The resources in the South China Sea are not governed by a property system. UNCLOS does not have provisions related to the allocation and use of property rights. Consequently, a market failure has resulted. Littoral states have failed to efficiently exploit the resources in their shared backyard. The absence of clear property rights and a means to transfer those rights mark two causes of that market failure.

UNCLOS has not protected littoral states from China's threats, rendering their claims to exploit resources within their EEZs fairly meaningless.[185] As Kenneth Schultz has argued, unresolved disputes related to territory and the rights that come with it generate uncertainty.[186] As a result of that uncertainty, states, businesses, and other stakeholders lack clear guidance about property rights; therefore, they see business deals, including foreign direct investment, wither.[187] China has generated a large negative externality by creating uncertainty for other states and agents of those states with respect to their ability to exploit undersea resources. An externality is an effect (either a positive or negative one) of

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181. *See* David Autor, Lecture on Externalities, The Coase Theorem and Market Remedies, (Spring 2004), https://dspace.mit.edu/bitstream/handle/1721.1/71009/14-03-fall-2004/contents/lecturenotes/ lecture17.pdf.

182. Herbert Hovenkamp, *Bargaining in Coasian Markets: Servitudes and Alternative Land Use Controls*, 27 IOWA J. CORP. L 519, 522 (2001).

183. *Id.*

184. *Id.*

185. The right of a state to exploit resources in its EEZ does not constitute a property right in the traditional sense, but this paper will not dive into the nuances between sovereign rights and property rights.

186. *See* Kenneth A. Schultz, *Borders, Conflict, and Trade*, 18 ANN. REV. POL. SCI. 125, 134 (2015).

187. *See id.* at 126.

an activity that impacts a party other than the actor.[188] Negative externalities cause a party to bear a cost as a result of the actions of another.[189] Market failures occur when an actor does not internalize the costs of their negative externalities.[190] A central authority, including, but not limited to, a government, can impose requirements on actors to ensure they do internalize such externalities. The authority can tax the actor and use the revenue to offset the negative externalities the actor may cause, for example.[191]

If UNCLOS properly functioned, then China would fear enough punishment for its continued contestation of the rights of other states that the PRC would refrain from its current foreign policy. Absent a central authority capable of enforcing such requirements and rules, as is the case with UNCLOS, property right holders will likely act out of self-interest and use their property in a way that imposes costs on others.[192] A property rights regime designed to maximize the welfare of several actors, then, will have incentives in place that encourage the internalization of externalities.[193] The details of that design must keep the overriding goal of any property system in mind: efficiency.[194] An efficient property system produces the greatest net social utility.[195] But a property right holder will only comply with the system's rules and regulations if other right holders in the system feel compelled to honor the rights of others and to adhere to the system's rules.

As detailed above, UNCLOS has failed to compel China and others to adhere to the treaty's provisions.[196] This failure is, in part, because of the number of parties to the treaty. Obviously, a system with fewer parties makes it possible to enforce the system's rules and to allocate clearly defined property rights. This has important corollary implications on the efficiency of that property system. Coase specified that an efficient property system need not concern itself with initial allocation of property rights among the included parties so long as the rights are clearly defined

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188. *See e.g.*, Carl J. Circo, *Does Sustainability Require a New Theory of Property Rights?*, 58 U. KAN. L. REV. 91, 116 (2009).

189. See *id.*

190. *See id.* (summarizing the thinking of A.C. Pigou, an economist known for his thoughts on externalities).

191. *See id.*

192. *Id.* at 117.

193. *Id.*

194. Circo, *supra* note 188, at 121.

195. *See* DANIEL H. COLE & PETER Z. GROSSMAN, PRINCIPLES OF LAW AND ECONOMICS 12-13 (David Alexander & Jeff Shelstad eds., 2005).

196. *See infra* Part II.B.

and can be transferred with little to no transaction costs.[197] Intuitively, transaction costs will likely remain lower when fewer parties participate in a system.

In a market with a lot of participants, a large enough coalition of parties is required to form a stable market.[198] That sort of coalition will emerge where players get the sense that a surplus can be derived and divided in a way that results in a larger share than they would have otherwise obtained.[199] A surplus is possible because the purchaser of the right values it more than the seller does. But a purchaser will only participate in that exchange if the right can be transferred and if the surplus generated outweighs the transaction costs to effectuate the deal.[200] However, as outlined in Part II.B, it is not the case in the South China Sea that states "broadly agree about one another's rights and obligations [under UNCLOS], as well as how to define them[.]"[201] So a new framework that allows states to negotiate sea-related rights in smaller groups is merited.

A smaller number of participants will not guarantee an efficient market for the exchange for rights because the property system must continue to keep transaction costs in check. Coase acknowledged that negotiations over property rights in the real world will always produce transaction costs.[202] In the event that costs threaten to or derail negotiations, economists recommend imposing additional obligations on the party that mitigate such costs at the lowest cost.[203] This logic has several implications for the governance of undersea resources in the South China Sea. The absence of a central authority to administer this regime and ensure transaction costs remain low means that China, as the state most capable of enforcing the regime at the lowest cost, should fill that role, at least temporarily.[204]

Several case studies reveal how unresolved maritime claims can render exploitation efforts inefficient. For example, uncertainty regarding sovereignty increased the transaction costs (by virtue of making negotiations more complicated) in negotiations between Suriname-Guyana and private companies and, consequently, stalled economic

197. Ronald H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1, 2-8 (1960).
198. *Id.*
199. *Id.*
200. *See id.*
201. Mitchell & Owsiak, *supra* note 57, at 595.
202. Coase, *supra* note 197, at 15-16.
203. COLE & GROSSMAN, *supra* note 195, at 87.
204. *See* Kardon, *supra* note 5, at 42.

development there.[205] Similar outcomes have occurred in the South China Sea.[206] Coase offers a way forward.

B. UNCLOS Does Not Create Complete Property Rights

Complete property rights in the sea must mirror the property rights expected on land if Coasian bargaining can occur. Property ownership on land comes with a bundle of rights. Those rights include the right to possess, to use, to manage, to derive income, to alienation, to security, to devise or bequeath, and to hold it without interruption for the duration of the term.[207] Where jurisdiction is lacking or uncertain, it is not possible for any state or group of states to assign exploitation rights or any rights for that matter. In other words, clear jurisdictional claims to territory are a "precondition for effective economic exploitation[.]"[208] This is especially true in the context of deep-sea resources because "the legal security that economic actors require and demand before engaging in costly exploration and exploitation operations" is high.[209] It follows that those states around the world have realized that UNCLOS does not contain the requisite provisions to create a functioning property regime.[210]

UNCLOS does specify several zones and specific rights within those zones,[211] but the open nature of the sea makes those rights hard to exclusively exercise. States that violate the rights of others rarely receive punishment for their behavior because the rights are grounded in a larger legal framework, UNCLOS, which is regarded as "uncertain, incomplete, and fractured[.]"[212] For instance, since 1992, China has impermissibly drawn its baselines in a way that inflates its territorial sea and EEZ; therefore, China infringes "upon the rights of other nations to use those

205. Mitchell & Owsiak, *supra* note 57, at 598-99 n.91.

206. *See infra* Part II.B.

207. *See* Denise R. Johnson, *Reflections on the Bundle of Rights*, 32 VERMONT L. REV. 247, 253 (2007) (noting that the number of rights and description of those rights has varied over time).

208. Isabel Feichtner, *Sharing the Riches of the Sea: The Redistributive and Fiscal Dimension of Deep Seabed Exploitation*, 30 EUR. J. INT. L. 601, 604 (2019).

209. *Id.* at 604-5.

210. *See* Gail Osherenko, *New Discourses on Ocean Governance: Understanding Property Rights and the Public Trust*, 21 J. ENV'T. L. & LITIG. 317, 325 (2006) ("Throughout the world, countries and subunits of national governments are recognizing the need to reshape ocean governance and the nature of property rights in the seas.").

211. *See infra* Part II.A.

212. *See* Craig H. Allen, *Protecting the Oceanic Gardens of Eden: International Law Issues in Deep-Sea Vent Resource Conservation and Management*, GEO. INT'L ENV'T L. REV 563, 566 (2001).

waters as allowed by [UNCLOS]."[213] Within these improperly claimed zones, China has enforced restrictions beyond those afforded by UNCLOS on vessels from other states.[214]

The lack of complete rights provided by UNCLOS limits the willingness of states to invest in certain activities necessary to an efficient economic outcome. For instance, states have recently shied away from efforts to understand the value of their rights. Joint exploration efforts by the Philippines and Vietnam helped evaluate the health of coral and fish stocks near the South China Sea from 1994 to 2007.[215] The two states plan to restart these explorations, which could have major ramifications for helping states and private entities alike to make a more accurate assessment of the value at stake in the South China Sea.[216] But, even if successfully restarted, these efforts would be partially stymied by the uncertainty caused by contested boundaries. Exploration of the Paracels and Macclesfield Bank, for instance, is likely off the table because of the disputes clouding those territories.[217]

It is unlikely that states will ever receive complete rights from UNCLOS because the framework has yet to adjust to a new technological reality. Under UNCLOS, the rewards for socially responsible behavior too infrequently match the costs incurred by that behavior.[218] While devising UNCLOS, drafters hoped that countries would refrain from a "neo-imperial scramble to effectively occupy and appropriate the deep seabed."[219] However, as covered in Part IV, technology eventually made occupation of deeper and further parts of the sea possible, making a key assumption of the drafters an outdated one. Because the UNCLOS framework has not been adjusted to new means of claiming and exercising rights, those states that comply with UNCLOS are likely to miss out on the benefits accruing to those willing to claim jurisdiction of contested areas, even if those areas clearly belong to a specific state under UNCLOS. As states with greater technological capacities can occupy more and more territory, they chip away at the exclusivity of exploitation rights that

213. Trung & Ngan, *supra* note 74.
214. *Id*.
215. *See* Dang, *supra* note 47.
216. *See id.*
217. *Id.*
218. *See* Duncan Snidal, *Public Goods, Property Rights, and Political Organizations*, 23 INT'L STUDIES QUARTERLY 532, 563 (1979) (noting the imbalance of rewards and costs as an indicator that a framework may not have the capacity to provide a public good).
219. Feichtner, *supra* note 208, at 606.

UNCLOS tried to establish for coastal states within their territorial seas and EEZ.[220]

States lack means via UNCLOS to receive compensation for the violation of their rights, further undermining the completeness of rights afforded by UNCLOS. As has been discussed, the Philippines won a clear victory in a dispute resolution mechanism specified by UNCLOS but have only received benefits from that award through means outside the strictures of UNCLOS.[221] Coercive measures by China seem to have a larger influence on the extent to which South China Sea states can exercise their rights. These extra-legal carrots and sticks shape the South China Sea "at the expense of the territory and sovereignty of regional states."[222]

Because legal claims to parts of the sea have little effect on the completeness of the property right, states have had to explore other means to assert their rights. Some states, such as the United States, tried to diminish their reliance on resources from the sea because of the uncertainty of UNCLOS. That may explain why the United States diverted its attention from the exploitation of deep-sea resources for as long as it could and instead sourced its supply of raw materials from the land, backed by the security of transnational economic law.[223]

C. UNCLOS Does Not Result in Few or Zero Transaction Costs

The limited efficacy of UNCLOS in specifying and protecting rights results in states having to incur transaction costs to challenge excessive claims to rights and to defend their own rights. States commonly conduct freedom of navigation operations ("FONOPs") to try to enforce their own rights and those of others in contested waters.[224] These operations demonstrate a refusal to legitimize territorial claims of rocks and artificial islands; some scholars deem these operations "vital" to preventing states from acquiring greater rights over disputed territory.[225] Transaction costs can soar in this setting because the more one state invests in establishing its claims, the more likely it is that other states will invest in protesting

220. *See id*. at 607.

221. *See supra* note 40.

222. Trung & Ngan, *supra* note 74.

223. *See* Feichtner, *supra* note 208, at 610 (citing Stephen Krasner).

224. *See* Helen Davidson, *China Warns US after Tracking Warship in South China Sea*, THE GUARDIAN (Jan. 20, 2022), https://www.theguardian.com/world/2022/jan/20/china-warns-of-serious-consequences-after-tracking-us-warship [https://perma.cc/MV3P-Z2QU].

225. *See* Saunders, *supra* note 137, at 682-83.

those claims.[226] These expenditures also increase the odds of a costly international incident, yet another source of transaction costs.

The cost of maintaining a large enough navy to contest the claims of other states further drives up the cumulative transaction costs expended under the current regime. China has stationed its coast guard near the Malaysian-administered Luconia Shoals for at least a decade as a way to contest any claims to that feature in the South China Sea.[227] To maintain a presence there and elsewhere, China has made significant investments in its navy. With more than $252 billion in military expenditures in 2020, China signaled its belief that under the current legal regime having the largest navy can result in more enforceable rights than relying solely on UNCLOS for the protection of rights.[228] Smaller countries have tried to keep pace with China. Malaysia, for example, leans on its Maritime Enforcement Agency to assert and defend the state's rights and laws in regions where it has UNCLOS-based claims.[229]

The central role of territory—both its existence and control—under UNCLOS results in yet another transaction cost to the assertion and exercise of rights in the sea — the construction and maintenance of artificial islands. Despite the arbitral tribunal clearly stating that it would not recognize artificially-enhanced rocks as islands for purposes of establishing maritime claims, China "continues to aggressively consolidate its territorial claims," as it has since at least 2013.[230] China has benefited immensely from the militarization of that claimed territory, as admitted by U.S. Admiral Phil Davidson.[231] Admiral Davidson acknowledged that because of China's territorial investments, it has the potential to control the South China Sea in nearly any kind of conflict.[232] Officials in the Japanese Ministry of Defense have made similar admissions, highlighting that territorial control in the South China Sea has enabled China to boost its "intelligence, surveillance, reconnaissance, and

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226. *See* Davidson, *supra* note 224 ("[T]he more that China maintains these 'baselines', the more they attract American and even British warships to challenge them.").

227. *Tracking China's Coast Guard Off Borneo,* ASIA MARITIME TRANSPARENCY INITIATIVE (Apr. 5, 2017), https://amti.csis.org/tracking-chinas-coast-guard-off-borneo [https://perma.cc/93ZF-PE2J].

228. Trung & Ngan, *supra* note 74.

229. Krishnan, *supra* note 44.

230. KUOK, *supra* note 60, at 5.

231. *Advance Policy Questions for Admiral Philip Davidson, USN Expected Nominee for Commander, U.S. Pacific Command*, 115th Cong. (2018) (statement of Admiral Phillip Davidson) at 17-18, https://www.armed-services.senate.gov/imo/media/doc/Davidson_APQs_04-17-18.pdf.

232. *Id*. at 18.

other mission capabilities[.]"[233] These admissions support the notion that territorial control can alter "natural resource allocation[s], international commerce, and military control" in a region.[234]

China's success in gaining more rights in more territory increases the odds of other states having to make the same expenditures to secure their own rights. This has already played out in the South China Sea, where the Philippines has done its best to maintain a small population on an intentionally grounded ship at Second Thomas Shoal.[235] The Philippines has already paid a heavy price for this small piece of territory and will have to continue to do so to fend off Chinese challenges.[236] China claims the authority to "demolish foreign buildings, structures, floating devices constructed on the seas, islands, and reefs under its jurisdiction according to [its domestic maritime law]."[237]

So, although UNCLOS provides states with a bundle of rights to exercise in each of their zones, those rights are so uncertain that states only transfer rights under very narrow conditions. That is why bilateral agreements to transfer and recognize rights have been recently used in the South China Sea.[238] Smaller agreements that involve valuable exchanges may create more interdependence between parties and stronger rights and fewer transaction costs.[239] This outcome aligns with issues that scholars have identified with treatises that take an all-or-nothing approach and suggests that a reliance on agreements with fewer parties may result in the most progress in terms of realizing the efficient exploitation of resources in the South China Sea.

IV. TECHNOLOGICAL ADVANCES AND PRESSURE ON THE LAW OF THE SEA REGIME

This section first outlines the relationship between technology and international law. Technology has long served as the impetus for reform of international law as well as the creation of new international law

233. *China's Activities in the South China Sea (China's Development Activities on the Features and Trends in Related Countries),* JAPAN MINISTRY OF DEF. 22-23 (July 2022), https://www.mod.go.jp/en/d_act/sec _env/pdf/ch_d-act_b_e_2207.pdf.

234. Kohl, *supra* note 155, at 919.

235. *See* Pitlo III, *supra* note 47.

236. *See id*.

237. Trung & Ngan, *supra* note 74.

238. *See supra* at 16-17.

239. *See generally* Hanna Chung, *Smaller Exchanges, Larger Regimes: How Trading in Small, Interdependent Units Affects Treaty Stability*, 10 CHI. J. INT'L L. 825, 825 (2010).

regimes. But it appears as though there has been a break in that pattern regarding technological progress with respect to space law and the Law of the Sea.[240] The second part briefly reviews how changes in space technology have upended broad agreements related to space and how that disruption mirrors issues with UNCLOS. The third part of this section details how that break has manifested in the South China Sea.

A. International Law Must Keep Pace with Technology to Ensure Compliance

The Law of the Sea has long "mispredict[ed]" the imminence of technological development, especially with respect to the development of undersea resources.[241] Advances in the Law of the Sea have previously addressed only "practicable exploitation" at the time of the advance rather than likely technological progress in the near future.[242] These miscalculations have been particularly off in determining the cost and capability of enforcing new laws, rules, and regulations.[243] Miscalculations on enforcement add up to making noncompliance an economically rational decision for many states. Where the economic cost of a violation is "significantly less than the economic gain of violation[,] then the regime will be unenforceable."[244] Technological advances that increase the gains derived from violations make the outcome of this calculation tilt toward more noncompliance.

New international agreements rarely remedy the mismatch between costs and gains, whereas bilateral or multi-lateral agreements may better account for the economics of enforcement and compliance, even in light of new technology, thereby making such smaller-scale agreements more enforceable.[245] The United States Magnuson Fisheries Conservation and Management Act ("MFCMA") provides an example of how agreements between nations, rather than among all nations, can at least theoretically improve compliance. The MFCMA requires nations seeking to fish in certain areas off of the U.S. to "surrender traditional high seas freedoms."[246] Theoretically, states that have signed agreements under the

240. *See infra* Part IV, C.
241. J.P. Craven, *Technology and the Law of the Sea: The Effect of Prediction and Misprediction*, 45 LA. L. REV. 1143, 1143 (1985).
242. *See id*. at 1145.
243. *See id*. at 1151.
244. *Id*.
245. *See id*. at 1152.
246. *Id*.

MFCMA permit the U.S. to use a range of enforcement mechanisms to ensure compliance.

This marks an improvement over regimes in which enforcement does not even theoretically appear likely. In such a situation, armed violence may become the preferred compliance mechanism.[247] The greater the mispredictions of technology and enforcement capabilities, the greater the need for "substantial and cooperative bilateral and multi-lateral agreements."[248] International law often struggles to adjust well to technological innovations. As detailed by Colin Picker of the University of Missouri, "[f]ailure to respond appropriately to technology can be devastating for policy makers and the international regimes they work so hard to create and nurture."[249]

The Law of the Sea has attempted to keep up with technological developments by accounting for "the exigencies of new social and economic interests[.]"[250] For example, the Law of the Sea changed when the United States had the technological capacity to exercise sovereignty over a larger part of the sea.[251] President Harry Truman relied on that capacity to declare, perhaps extra-legally, that the U.S. had sovereignty over its continental shelf.[252] As other states demonstrated a similar ability to exert exclusive control over more distant parts of the sea, the idea of an EEZ caught hold and eventually became law.[253]

Recent technological advances,[254] though, seem to have evaded the necessary amended processes. Predictions from researchers such as Gail Osherenko that "new ocean discourses" would "lead to new systems of ocean governance" to address novel and widespread conflicts have not been realized.[255] Little evidence exists to suggest coming reform to UNCLOS to comport with new and forthcoming technologies. Calls from Elliott Norse, then-President of the Marine Conservation Biology Institute, to proactively resolve conflicts between competing interests by effectively

247. *See* Craven, *supra* note 241, at 1153.

248. *See id.*

249. Colin B. Picker, *A View from 40,000 Feet: International Law and the Invisible Hand of Technology*, 23 CARDOZO L. REV. 149, 151 (2001).

250. *Id.* at 166 (quoting Myres S. McDougal & Norbert A. Schlei, The Hydrogen Bomb Tests in Perspective: Lawful Measures for Security, 64 Yale L.J. 648, 656 (1954-55)).

251. *Id*.

252. *Id*.

253. *Id*. at 167-68.

254. Osherenko, *supra* note 210, at 318 (listing wind, wave, tidal-energy facilities, tuna ranches, liquid natural gas, and oil extraction as industries with expanding footprints in offshore areas).

255. *Id*. at 320.

"zoning" the ocean have not materialized in international law.[256] This is unsurprising. Broad agreements, such as UNCLOS, rarely work when technology advances occur in rapid succession and to the benefit of a small group of the international community.[257] The rapid clip of innovation means that the conditions under which a state ratified an agreement may have changed so drastically that the state no longer wishes to follow that agreement.[258] That diminished likelihood is compounded when the instant innovation is in the hands of a few states, which would feel the pain of acquiescing to a broad agreement more acutely than other states.[259]

B. The Disconnect Between Space Law and Satellite Technology Illustrates the Need for Reform in the Law of the Sea

Space Law and the Law of the Sea share several similarities. Initial agreements to govern these areas attempted to regard much, if not all, of the area as a common resource for all mankind.[260] Those agreements did not anticipate the speed and significance of technological developments. This shortcoming with respect to the Outer Space Treaty, the equivalent of UNCLOS in space, has nudged scholars to suggest reforms.[261] The principles behind those reforms have value when thinking about how to bring the Law of the Sea up to date with technological changes like those at issue in the South China Sea.

Advances in satellite technology have made it possible for entities to establish property rights. The Outer Space Treaty did not forecast these advances.[262] That failure has decreased investment by entities unwilling to invest without a stable legal regime in place and increased the willingness of more risk-loving entities to behave in ways that impose negative

256. Eliott A. Norse, *Ending the Range Wars on the Last Frontier: Zoning the Sea, in* MARINE CONSERVATION BIOLOGY: THE SCIENCE OF MAINTAINING THE SEA'S BIODIVERSITY 422, 422 (Elliott A. Norse & Larry B. Crowder eds., 2005).

257. Picker, *supra* note 249, at 184.

258. *Id*.

259. *Id*. at 184-85.

260. *See, e.g.,* Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410 [hereinafter Outer Space Treaty].

261. *See* Ian Blodger, *Reclassifying Geostationary Earth Orbit as Private Property: Why Natural Law and Utilitarian Theories of Property Demand Privatization*, 17 MINN. J.L. SCI. & TECH. 409, 436 (2016) (listing scholars who argued that economic incentives and a lack of limiting regulations may result in too many satellites as the costs of launching satellites decreased).

262. *See id*. at 411.

externalities on third parties.[263] The resulting shortage of investment has likely deprived the world of numerous scientific discoveries and other public goods.[264]

The nature of the technological advances—namely, their impact on economic incentives and potential conflict with existing laws—merit changing the legal regime to grant more respect for property claims. The current regime treats all property as communal.[265] Private stakeholders have no incentives to take care of this communal space. So negative externalities—such as the costs imposed by non-operational satellites and space debris—have abounded.[266] These negative externalities have a direct impact on the overall development in space infrastructure because the more clutter in the skies, the higher the chances of a functional satellite being damaged and, consequently, of the owner not recovering the costs to create and operate the satellite.[267]

Geostationary Earth orbit ("GEO") zones have traditional aspects of property, such as physically occupying territory, but the regime governing GEOs fails to secure property rights.[268] GEO is an orbital zone in which a satellite can remain in the same spot above Earth.[269] A satellite in this position can provide a terrestrial installation with constant communication, reducing the need for costly recalibration.[270] Portions of these zones can be occupied in the same way that someone can claim a finite piece of land;[271] a GEO can only support 2,000 satellites because any additional satellites could result in communication frequency interference.[272] The potential for interference makes the space occupied by a satellite effectively excludable. The International Telecommunications

263. *See id*. at 413.

264. *See id*. at 410.

265. *See generally* Outer Space Treaty, *supra* note 260, at Annex ("The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.").

266. *See* Blodger, *supra* note 262, at 411.

267. *See id*. at 416.

268. *See id*. at 431, 439.

269. *Id.* at 413-14.

270. Michael J. Finch, *Limited Space: Allocating the Geostationary Orbit*, 7 NW. J. INT'L L. & BUS. 788, 788 (1986).

271. *See* Declaration of the First Meeting of Equatorial Countries, Dec. 3, 1976, ITU Doc. WARC-BS 81-E, http://www.jaxa.jp/library/space_law/chapter_2/2-2-1-2_e.html [hereinafter Bogotá Declaration] ("The geostationary orbit is a scarce natural resource, whose importance and value increase rapidly together with the development of space technology and with the growing need for communication.").

272. Finch, *supra* note 271, at 789.

Union ("ITU") assists satellite operators in finding an open orbital zone and registers the location of each satellite, further evidencing the excludability of a GEO because the ITU would not have operators send satellites to the same spot.[273]

Yet, the governing regime does not afford occupants of a GEO zone property rights. This is despite the reality that technology has made it possible to occupy something thought to be in common use.[274] Without the assurances of property rights, interested parties have accordingly refrained from investing in satellites. Though as many as 2,000 satellites can remain in geostationary orbit, just 412 satellites occupy such an orbit as of 2016.[275] The absence of property rights has resulted in satellite owners doing little, if anything, to reduce the number of non-operational satellites and other debris, all of which hinders the interests of investors seeking to place their own satellites in geostationary orbit.[276] The longer that satellite owners lack an incentive to clean up after themselves, the greater the losses in future investment because satellites will have to launch with costlier protection measures in response to the increased odds of damage.[277]

Ian Blodger theorizes that property rights could reduce the negative externalities currently limiting the economic potential of orbital zones. Leaning on the lessons of economist Harold Demsetz,[278] Blodger summarizes that property rights would encourage satellite owners to use orbital zones more efficiently because the operator would have to internalize the costs of their debris and other externalities they may have otherwise ignored.[279] Notably, the creation of a system for property rights in orbital zones could spur more efficient exploitation of other areas of space. Demsetz observed that the conferral of property rights has historically followed the spread of knowledge of how to exploit a resource;

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273. *See* Lawrence D. Roberts, *A Lost Connection: Geostationary Satellite Networks and the International Telecommunication Union*, 15 BERKLEY TECH. L.J. 1095, 1111 (2000).

274. *See* Blodger, *supra* note 262, at 431-32.

275. *Id*. at 414.

276. *See id*. at 415; *see also* Theresa Hitchens, *Space Debris*, GLOBAL NETWORK AGAINST WEAPONS AND NUCLEAR POWER IN SPACE (Aug. 2005), http://www.space4peace.org/articles/debris_facts.htm [https://perma.cc/34N4-YXPS] ("The amount of space junk is increasing by about 5 percent per year; meaning that by the end of the century a satellite in GEO will have a 40 percent chance of being struck during its operation life-time.").

277. Blodger, *supra* note 262, at 416.

278. *See generally* Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 350 (1967) (outlining his economic theory related to property rights).

279. Blodger, *supra* note 262, at 427.

technological progress will surely allow more space to become efficiently exploitable.[280]

Treatment of orbital zones as a shared resource has only resulted in the shared willingness to litter space with debris. Technology has made these zones identifiable, occupiable, and excludable—in other words, capable of being allocated as property.[281] The combination of assigning these zones as property to owners and subjecting those owners to a code of conduct could significantly reduce the odds of space becoming overrun with debris.[282] The code of conduct would need to impose a sufficiently costly set of requirements to reduce the odds of too many operators sending satellites into space with no concerns about the debris that may result.[283]

The United States appears unwilling to wait for a universal framework for the allocation of property rights in space. According to Executive Order 13914, Americans have the right to "engage in commercial exploration, recovery, and use of resources in outer space."[284] Though this Executive Order did not deal with GEO zones, it exemplifies a principle of natural resource extraction—that when technology makes extraction possible, states with that technology will extract resources as though they have property rights. The best policy, then, is to govern the allocation of such rights.

Unlike the Law of the Sea, which has been amended serially over centuries, space law has less baggage thwarting its adoption of best principles. The fact that space law is trending toward identifying and allocating property rights so early in its existence should send a signal to those thinking about how to bring the Law of the Sea up to date.[285]

An earlier generation of scholars recognized the importance of property rights to avoiding economic waste and reducing negative externalities in the context of undersea resources. Ross Eckert, writing in 1979, for example, posited that the efficient exploitation of such resources would occur in two steps: UNCLOS marked the first step—it defined more exclusive resource rights; the second step requires allowing "authorities to

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280. *Id*.

281. *See id*. at 431-32.

282. *See id*. at 436.

283. *See id*.

284. Proclamation No. 13914, 85 Fed. Reg. 20,381 (Apr. 6, 2020).

285. *See* Gershon Hasin, *Developing a Global Order for Space Resources: A Regime Evolution Approach*, 52 GEO J. INT'L L. 77, 89 (2020) (noting that most scholars regard commercial exploitation of certain resources in space as permissible under current international law); *see also id*. at 106 (describing how Luxembourg and other countries have followed the lead of the United States in recognizing property rights).

assign exclusive and transferable private property rights to individuals, firms, or other entities."[286] That second step has yet to occur. It's overdue. The fact that frameworks to govern resources in space have already incorporated or are working to incorporate both steps in Eckert's process reveals that resource management in the ocean is languishing.

C. International Law Has Not Kept Pace with Technological Advances in the South China Sea

Advances in technology justify moving away from UNCLOS as the means to bring peace and stability to the South China Sea. Technological and scientific progress has previously prompted the formation of new legal frameworks. "[F]uturistic visions of people living on the moon and in underwater cities," for example, pushed governments to launch the proceedings that led to UNCLOS.[287] Similarly, as pointed out by Dr. Saunders, "sovereign rights were only asserted over the continental shelf after technological developments made retrieving resources viable."[288] Technological advances in the exploitation of deep-sea resources and in the creation of artificial islands must push governments to again think of a regime that's responsive to those technological steps forward. This is especially true in the South China Sea, where new technology has made the value of certain rights more valuable and, thus, more important to clarify and make exclusive.

"'[T]he technology for extracting value from [the deep seabed] . . . has developed more rapidly than the appropriate legal mechanisms for establishing an effective property regime,'" according to Scott Shackelford.[289] Back in the mid-1970s, just before the ratification of UNCLOS, harvesting nodules was akin to "standing on the top of the Empire State Building, trying to pick up small stones on the sidewalk using a long straw, at night."[290] At least that's how one CEO of a mining company described the state of extraction in the 1970s.[291] Things have changed as of 2021, as evidenced by Gerard Barron, the CEO of a seabed-mining company equating harvesting to "vacuuming golf balls off a

286. ROSS D. ECKERT, THE ENCLOSURE OF OCEAN RESOURCES 16 (1979).
287. Feichtner, *supra* note 208, at 605.
288. Saunders, *supra* note 137, at 646-47.
289. Scott J. Shackelford, *Was Selden Right: The Expansion of Closed Seas and Its Consequences*, 47 STAN. J. INT'L L. 1, 7 (2010) (quoting Elinor Ostrom, *Foreword* to SUSAN J. BUCK, THE GLOBAL COMMONS: AN INTRODUCTION xiii (1998)).
290. Watts, *supra* note 6.
291. *Id*.

putting green."[292] More generally, advances in technology have generated improvements in undersea imaging, software for predicting the locations of mineral fields, and guidance for ROVs.[293] Companies are actively trialing this technology. For instance, one company has already tested "a 12-m-long, 25-ton nodule-sucking robot that zigzags across the ocean floor on caterpillar tracks, kind of like a giant underwater Roomba."[294] Others have already designed and tested technologies "for retrieving material, including hydraulic pumping and conveyance systems. Some of this testing has occurred to depths of approximately 21,000 feet [or 6,400 meters]."[295] Back in 2001, oil and gas explorations tapped out at depths of about 2,500 meters.[296]

Considering the spread and use of this technology, states and third-party observers have struggled to hold states accountable under UNCLOS. Physically, it's difficult to monitor states using this technology. "If mining in the deep ocean is technologically challenging and expensive, then independent oversight is even tougher," writes Jonathan Watts.[297] Deep-sea mining often occurs where environmental organizations cannot easily go, where journalists cannot see, and where people have no stage to protest from.[298]

Access to technology varies greatly among the littoral states. Local national companies in most littoral states lack the latest technology.[299] They fear that investments might not generate returns due to contestations from China and a lack of research as to the precise value of nearby deep-sea resources.[300] China has a comparative advantage when it comes to

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292. Aryn Baker, *A Climate Solution Lies Deep Under the Ocean—But Accessing It Could Have Huge Environmental Costs,* TIME 1, 1 (Sept. 10, 2021), https://time.com/6094560/deep-sea-mining-environmental-costs-benefits [https://perma.cc/6EE9-KQ6J]; *see also* Mike Ives, *The Rising Environmental Toll of China's Offshore Island Grab*, YALE ENV'T 360 (Oct. 10, 2016), https://e360.yale.edu/features/rising_environmental_toll_china_artificial_islands_south_china_sea [https://perma.cc/NR98-QQCX].

293. *Deep-Sea Mining*, GOV'T ACCOUNTABILITY OFF. (Dec. 2021), https://www.gao.gov/assets/gao-22-105507.pdf.

294. Baker, *supra* note 294, at 4.

295. *Deep Sea Mining*, *supra* note 295.

296. Allen, *supra* note 212, at 575-76.

297. Watts, *supra* note 6, at ¶13.

298. *Id*.

299. John R. Weinberger, *China Seeks to Dominate Off-Shore Energy Resources in the South and East China Seas*, INT'L ASS'N FOR ENERGY ECON. at 17 (2015).

300. *See* Dolma Tsering, *China Deep-Sea Exploration: Intention and Concerns*, 13 MARITIME AFF.: J. OF THE NAT'L MARITIME FOUND. OF INDIA 91, 94 (2017).

locating resources and extracting those resources.[301] As far back as 2014, China had developed its own "deep-water semisubmersible drilling rig."[302] China has also made investments in under-water research centers and autonomous and unmanned vehicles for deep-sea resource exploration.[303] These technological advances serve the primary purpose of improving China's ability to explore and extract deep-sea resources, such as minerals.[304]

The need for a new legal framework increases each day because of technological advances accumulating in the hands of a few states and the growing demand for deep-sea resources[305]—excludable resources that will end up in the hands of states willing to exert physical violence, absent a new regime, to allocate property rights.[306] According to the Global Accountability Office, "[t]he International Energy Agency expects demand for cobalt, copper, nickel, and rare earth elements to at least double (or possibly more than triple) within the next 20 years."[307] As states and private actors alike see this demand grow, they will feel more and more comfortable extracting resources with or without a suitable legal framework. In the absence of such a framework, states will necessarily continue to spend excessive funds defending their rights and find it too difficult to assign some of those rights to other states. For example, not only has China dampened investment in deep-sea resource technology in littoral states because of its naval threats, but it has also provoked those same littoral states to spend resources pushing China back from exploring resources in disputed areas.[308] As long as China possesses superior deep-sea resources,[309] it will have another means to diminish the claims of littoral states; China will use "its ocean exploration capability to enforce its control over disputed waters."[310]

Use of advanced technology comes at great cost, which explains why states demand more clarity over their rights with respect to the territory

301. *See id*. at 95.
302. Weinberger, *supra* note 301, at 17.
303. *See* Tsering, *supra* note 302, at 92-93.
304. *Id*. at 94.
305. *See* Watts, *supra* note 6, at ¶ 6 (explaining that "[m]ining companies also insist on urgency – to start exploration. They say the minerals – copper, cobalt, nickel and manganese – are essential for a green transition.")
306. Allen, *supra* note 212, at 566 (noting the excludability of undersea resources).
307. *Deep Sea Mining*, *supra* note 295, at 1.
308. Tsering, *supra* note 301, at 95 (describing how Vietnam had to mobilize 29 ships to stop China from deploying a drilling platform in a contested area).
309. Kardon, *supra* note 5, at 42 (describing China's capacity to "use and administer [undersea] resources" as "exponentially greater" than those of nearby states).
310. Tsering, *supra* note 301, at 5.

where drilling occurs and the resources that drilling may produce.[311] That's precisely why states challenged the idea of an international authority controlling deep-sea resource exploitation during the creation of UNCLOS, and why they continue to protest that idea today.[312]

Advances in deep-sea technology have also accelerated progress in the construction, occupation, and use of artificial islands.[313] That progress has been unchecked, making it a powerful tool for states that can harness it. Though artificial island building "has accelerated, no [international convention to determine their status in international law] has been forthcoming."[314] Technological advances in artificial island construction have revealed the insufficient attention paid to the territorial status of these islands.[315] Prior to these advances, international law viewed their status as "unimportant."[316] The legal regime must be updated to reflect the feasibility of large-scale land reclamation and the number of countries engaging in such reclamation. It follows that "[a]s new areas become accessible, we must consider how the law applies to them."[317] And, "we" must also consider if the law adequately resolves the issues presented by the new areas and technology.

China has relied on new technology to drive its artificial island activity. At one point, China was using the third largest self-propelled cutter suction dredger in the world to develop territory in the Spratly Islands.[318] The self-propelling dredger can easily move along reefs like those in the Spratlys and make a noticeable impact in a matter of days.[319] One such dredger permits China to dredge to a depth of 98 feet and move more than 159,000 cubic feet of seabed in an hour.[320] Unsurprisingly, this activity results in substantial environmental damage—a negative externality.[321] As detailed above, such technology did not exist when

311. *See* Feichtner, *supra* note 208, at 609-10.
312. *Id*.
313. Tsering, *supra* note 301, at 5-6.
314. Saunders, *supra* note 137, at 646.
315. *See id*.
316. *Id*. at 645.
317. *Id.* at 647.
318. *Chinese Land Reclamation in the South China Sea: Implications and Policy Options*, Congressional Research Service at 18.
319. *Id*. at 18-19.
320. *Id*. at 18.
321. *See* Katherine Dafforn et al. *We must respect the ocean when building artificial islands*, WORLD ECONOMIC FORUM (Jul. 24, 2018), https://www.weforum.org/agenda/2018/07/future-ocean-cities-need-green-engineering-above-and-below-the-

UNCLOS drafters were defining rocks, islands, and artificial islands and the claims that could attach to those landforms.

Other countries have similarly demonstrated the ability to rapidly build artificial islands.[322] According to social geographer Alastair Bonnett, "'[n]ew islands are being built in numbers and on a scale never seen before.'"[323] These islands may not serve the same purposes as those built by China, but their status under UNCLOS and international law is still important.

China's artificial island development stands apart for its scale and significance. Perhaps UNCLOS drafters could have conceived of states such as Japan creating artificial islands immediately offshore of the state itself, especially given the long history of artificial island development by other states, such as the Netherlands. What distinguishes China's artificial island activities is their location in contested waters and the ability of the Chinese navy to render these new pieces of land de facto territory.[324] China has also occupied some of its islands by turning them into launch points for military operations.[325] Development of these islands is likely far from over. Gregory B. Poling, director of the Asia Maritime Transparency Initiative, speculates that the longer China feels pressured to build artificial islands to have exclusive control over the South China Sea, the more China

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waterline/#:~:text=The%20creation%20of%20artificial%20islands,on%20top%20of%20coral%20reefs [https://perma.cc/K4F6-ZNGE].

322. *See generally* Richard Fischer & Javier Hirschfeld, *Why We are in 'the Age of Artificial Islands'*, BBC (Jan. 6, 2022), https://www.bbc.com/future/article/20220105-why-were-in-the-age-of-artificial-islands [https://perma.cc/3Y4T-52XM].

323. *Id*.

324. *See, e.g.,* Erin Hale, *China Uses Maritime Militia to Assert Claim on South China Sea*, AL JAZEERA (Nov. 19, 2021), https://www.aljazeera.com/news/2021/11/19/china-supports-maritime-militia-to-assert-south-china-sea-claim [https://perma.cc/LN55-W3KN] (detailing how China has used its maritime militia and Coast Guard ships to patrol the Spratly Islands located near the Philippines).

325. *See* Gregory Poling, *The Conventional Wisdom on China's Island Bases is Dangerously Wrong*, TEX, NAT'L SEC. REV. (Jan. 10, 2020), https://warontherocks.com/2020/01/the-conventional-wisdom-on-chinas-island-bases-is-dangerously-wrong [https://perma.cc/3V87-RZRW] (explaining that "[t]hanks to the facilities on its island bases, hundreds of militia vessels and a large number of coast guard ships are based hundreds of miles from the Chinese coast for months at a time. They engage in frequent harassment of civilian and law enforcement activities by neighboring states, making it prohibitively risky for Southeast Asian players to operate in the South China Sea."). *Cf* Donald K. Emmerson, *Why Does China Want to Control the South China Sea?*, STAN. UNIV. (May 24, 2016), https://fsi.stanford.edu/news/why-does-china-want-control-south-china-sea [https://perma.cc/7GVR-9S8Q] (pointing out that other littoral states have installed military features on artificial islands, too).

will infringe on the ability of the littoral states to exploit the region's resources safely and freely.[326]

Just as technology made certain orbital zones occupiable and excludable, technology has imbued parts of the sea with the same characteristics. Technology has made deep-sea resources easier to tap into, regardless of their depth. Technology has also permitted the development and defense of artificial islands far from a state's coast. The idea of using property rights to reduce debris and other negative externalities in space deserves greater attention in discussion on how to reduce conflict in the South China Sea.

VI. APPLICATION OF COASIAN BARGAINING TO THE SOUTH CHINA SEA DISPUTE

This section applies the lessons learned from the economics of territorial possession and the impact of technology on international law to suggest a framework for reducing conflict and increasing efficient exploitation of deep-sea resources in the South China Sea. The first part points out that UNCLOS has low odds of serving as the legal framework for allocating property rights in the South China Sea. The second part argues that the technological and economic dominance of China necessitates that the legal framework accounts for China's non-negotiable stances. The third outlines some initial steps to facilitate the efficient allocation of property rights in the South China Sea.

A. UNCLOS Will Not Serve as the Legal Framework for Resolving Conflict in the South China Sea

As discussed above, in Part II.B., because China never internalized "core norms essential to [UNCLOS's] functionality[,]" it did not intend to abide by the terms of the treaty.[327] Regional stakeholders are aware of China's view of UNCLOS and have little expectation of the treaty stalling China's defense of its territorial claims.[328] As China continues to flout the rules, this lack of reliance on UNCLOS will render the treaty less and less meaningful. Other states in the region have already given up on using UNCLOS to advance claims against China.[329]

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326. Poling, *supra* note 327.

327. Kardon, *supra* note 5, at 6.

328. *See id*. at 14 (explaining that the Philippines had "no reasonable expectation that China would willingly comply with [the arbitration].")

329. *See id*. at 46 (discussing Vietnam's avoidance of leaning on UNCLOS).

But the treaty has other, more general flaws that limit its efficacy. UNCLOS has too many parties with too many divergent technological capabilities to set up the efficient exploitation of deep-sea resources. This is especially true in the context of the South China Sea. States with technological prowess will inevitably circumvent a regime that deprives them of economic opportunity. The "[i]nduced contributions" required to adhere to UNCLOS, such as not exploiting nearby deep-sea resources despite having the technological and political will to do so, do not "outweigh losses," which include the gains to "cheating" nations which engage in illegal exploitation.[330] When that is the case, Duncan Snidal posits that the optimal group size has not been achieved because the losses from cheating are too high.[331] There are unrealized benefits in the South China Sea because under UNCLOS the littoral states identify investments in deep-sea exploitation as too risky.

Once an organization emerges that is capable of "imposing and enforcing property rights and of collecting payments for centrally provided services," then the provision of public goods can occur.[332] China has made clear that it will not allow an organization made up of states outside of the South China Sea to impose and enforce property rights in the area.[333] So the realization of peace, stability, and the economically-efficient exploitation of the South China Sea will not come through UNCLOS. An organization of just the South China Sea states has much higher odds of imposing and enforcing property rights. For this organization to succeed, it must have internal participation by all the littoral states as well as acceptance by external states.

The right analysis of a quasi- or pure public good should not focus on "the exchange of the good in question, but rather the exchange of authority between states."[334] Once the exchange of authority becomes the focus of an analysis of the South China Sea, it becomes obvious that UNCLOS will not result in the efficient extraction of the goods in question because the largest player in the South China Sea—China—refuses to cede any authority to external states and organizations. This reality is not unique to the South China Sea.

China is not the only state unwilling to cede authority to the rules imposed by UNCLOS. The world might have more confidence that deep-

330. *See* Snidal, *supra* note 218, at 561.

331. *See id*.

332. *Id*. at 564.

333. *See* Emmerson, *supra* note 327 (identifying the "'the century of humiliation'" during which Western powers freely sailed in the South China Sea as a reason for China's attempts to assert control over the area).

334. Snidal, *supra* note 218, at 564.

sea mining would have minimal impacts on ocean ecosystems if it was the case that "the regulatory body was more open, more democratic, less focused on commercial gain and more attuned to environmental loss."[335] Based on Snidal's research, international institutions rarely serve as the best political institution for resolving public good problems because too few states cede sufficient authority to that institution for it to take appropriate action.[336] UNCLOS, lacking concessions of authority from China and others, does not have the key capacity of a framework likely to adequately address these sorts of problems: "the ability to regulate the production and exchange of goods."[337] A number of littoral states have already acknowledged the need for a homegrown resolution.[338]

The better that China and other littoral states become at excluding others from the South China Sea, the more likely they will be able to ensure compliance among participating states.[339] "The more effective a group is at establishing property rights," argues Snidal, "the harder it is to take a free ride and the greater the incentive for individuals to become paying members of the group."[340] China will protest and disrupt property rights established by any group that includes stakeholders outside of the South China Sea.[341] So the most effective group in the context of the distribution of benefits derived from deep-sea resources in the South China Sea is the group that only includes the littoral states.[342]

B. China Must Have Its Non-Negotiables Met for Any Property Rights Regime to Work

China has adopted policy stances and legal interpretations incongruous with allowing the rules and frameworks set forth by UNCLOS to resolve conflicts in the South China Sea. For one, China appears unlikely to ever use UNCLOS's dispute resolution mechanisms, especially as a first means to resolving a conflict.[343] As recently as 2019, a

335. Watt, *supra* note 5.

336. Snidal, *supra* note 218, at 564.

337. *See id*. at 563.

338. *See* International Crisis Group, *supra* note 31, at 14 (discussing how Malaysia and Brunei have reached bilateral agreements and appear willing to complete similar agreements with regard to the larger South China Sea conflict).

339. *See* Snidal, *supra* note 218, at 560.

340. *Id*.

341. *See supra* II.B.

342. *See* Snidal, *supra* note 218, at 560.

343. Xinmin Ma, *China and the UNCLOS: Practices and Policies*, 5 THE CHINESE J. OF GLOB. GOVERNANCE 1, 16 (2019).

representative of the Chinese government made clear that "China always insists that the solution [to problems related to territorial sovereignty entitlements] should be reached through negotiation and consultation between the States directly concerned in accordance with international law."[344] The government prefers negotiations to resolve maritime delimitation issues as well.[345] China suggests that the use of non-UNCLOS-based problem solving mechanisms has been its state practice since 1949 and has worked well—citing a track record of reaching agreements with all but two of its neighbors.[346] Though this dispute resolution mechanism may impose low-costs for China, it's unlikely that other states will regard ceding to China's demands as a low-cost, local area for dispute resolution absent additional safeguards.[347] A new institution that identifies negotiations as the starting place for dispute resolution among members will have increased odds of acceptance from China. Littoral states may prefer this institution to UNCLOS-based resolution mechanisms when dealing with South China Sea issues because China will likely ignore any decision from the latter.

China's conception of its territorial seas, EEZs, continental shelf, installations, structures, and artificial islands and the rights afforded to those areas do not align with UNCLOS and never will.[348] The government frames the Law of the Sea as a bird with two wings—one wing comes from UNCLOS, the other from general international law.[349] This conception permits China to argue it has a legal basis for a number of decisions that parties to UNCLOS would contest—such as the rights a state may exercise in certain areas,[350] and what's required to assert a claim to a maritime

344. *Id*.

345. *Id*. at 15.

346. *Id*. at 16.

347. Bimo Abraham Nkhata, *Property Rights, Institutional Regime Shifts and the Provision of Freshwater Ecosystem Services on the Pongola River Floodplain, South Africa*, 11 INT'L J. OF THE COMMONS 97, 105 (2017) (listing "conflict resolution" as one of the seven principles "for the establishment and maintenance of long-enduring institutional regimes for governing natural resources.").

348. International Crisis Group, *supra* note 31, at Executive Summary (describing China's legal arguments as novel); *see* Kardon, *supra* note 5, at 6 (Arguing that the PRC's mode of interpreting UNCLOS "treats UNCLOS as fundamentally indeterminate and far from comprehensive.").

349. Ma, *supra* note 345, at 10.

350. *See, e.g.*, *id*. at 14 ("China also holds that the coastal State enjoys the sovereign rights in the EEZ over the natural resources and economic exploitation and exploration and has jurisdiction with regard to the establishment and use of artificial islands, installations and structures, marine scientific research and the protection and preservation of the marine environment.").

feature or boundary.[351] Even where China does agree that UNCLOS applies to a specific issue, it often employs an interpretation out of line with the majority of parties to reach an outcome it prefers.[352] UNCLOS cannot resolve issues in the South China Sea if China does not interpret the Convention as applying to those issues.[353]

China's position on the exploration and exploitation of resources in the Area sheds light on its preferences for a regime governing the South China Sea. The key principles behind China's position include "be[ing] market oriented,"[354] the incorporation of commercial best practices,[355] and the prioritization of local or regional arrangements.[356] China's position also wants to make sure that the obligations of states and contractors are clearly specified, without placing too much potential liability on states for the actions of contractors that had been appropriately reviewed by the state in question.[357] China has already signaled a willingness to consider identifying parts of the Sea as "some sort of common pool resource with a joint development scheme for fisheries and hydrocarbons."[358] So, as long as the littoral states accept that such a scheme would likely be administered by China and managed by Chinese firms, then a regional scheme to exploit such resources could actually work.[359]

The absence of external states is another necessary condition for the scheme to work. An unwillingness to invite external states into the South China Sea region also sheds light on China's likely policy preference. A proposed "21st Century Maritime Silk Road" led by China exemplifies the role that the state wants to play in shaping the future of maritime

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351. *See, e.g.*, *id*. at 10 ("With respect to historic rights, the Law on the Exclusive Economic Zone (EEZ) and the Continental Shelf enacted by China in 1998 establishes the legal regime of China's EEZ and the continental shelf, in which Article 14 expressly stipulates that, the provisions in this law shall not affect the historic rights that the People's Republic of China enjoys.").

352. *See id*. at 4 (providing an example of China and thirty other countries interpreting UNCLOS a certain way); *see also* Kardon, *supra* note 5, at 13 ("China reserved the right to interpret the rules according to its domestic priorities, with only minimal regard for international consequences.").

353. *See* International Crisis Group, *supra* note 31, at ii ("Recourse to international law, namely UNCLOS, to manage and resolve disputes in the South China Sea certainly appears unrealistic, given China's unilateral interpretations of the treaty's provisions and rejection of the 2016 arbitral award[.]").

354. *See id*.

355. *See* Ma, *supra* note 345, at 2.

356. *See id*.

357. *See id*. at 8.

358. Kardon, *supra* note 5, at 41-42 (summarizing a conversation with a Chinese official).

359. *See id*. at 42.

commerce and exploration in the region.[360] Researchers at the Center for Strategic and International Studies speculate that this maritime road is meant, in part, to diminish the influence external actors can have on the region by making regional states more reliant on China.[361]

C. Specific Steps Can Increase the Likelihood of Adherence to the Property Rights Regime

The creation of a new legal regime made up of the South China Sea littoral states and tasked with distributing property rights over specific portions of the seabed would result in several positive outcomes. One benefit would emerge from the fact that assigning property rights would give states a greater incentive to ensure stability in the region.[362] International observers agree that ending disputes over boundaries and providing states with certainty over where they can engage in economic activity would reduce tensions in the region.[363] As discussed above, China's stance with respect to the dispute resolutions within UNCLOS means that the resolution of such disputes is far more likely in a regional regime.

This regime could also create processes and procedures that encourage states to internalize externalities related to the exploitation of deep-sea resources, as well as externalities from related activities such as the development of artificial islands. The regime, for instance, could condition the allocation of property rights on states agreeing to certain terms. These terms could set standards meant to protect the environment and encourage information sharing. Of course, the regime could also require states to pay fees to assist with enforcement of the property rights. China might accept such costs knowing that they would prefer enforcement efforts by a regional stakeholder rather than AUKUS, for example. Other littoral states would likely welcome safeguards to encourage domestic development of technology related to deep-sea exploitation. The uncertainty of the status quo has made such investments far riskier than most states can stomach.

An information-sharing agreement would not only help with the efficient allocation of plots in the South China Sea but also the efficient extraction of deep-sea resources. The legal regime could more accurately

360. *See* Ma, *supra* note 345, at 9 (describing China's initiative).

361. Zach Cooper et al., CHINA'S MARITIME SILK ROAD 5 (2018) (describing this dynamic with respect to investments in Myanmar).

362. *See id*. at 13 (discussing the fact that as China gains more influence in the South China Sea it will have a greater interest in keeping the area peaceful).

363. International Crisis Group, *supra* note 31, at Appendix B, 5-6 (detailing violent maritime encounters between littoral states (other than China) over small claims).

assess the estimated value of plots before allowing littoral states to bid on it. Current estimates of the value and location of hydrocarbon stores are flawed and have not been independently conducted.[364] China has an incentive to have this work take place as soon as possible because "[f]ossil fuels are the lifeblood of China's economy."[365] With the most promising pools of hydrocarbon identified, littoral states could rapidly tap into those pools and provide China with far greater energy security. The majority of China's crude oil supplies come from abroad, with forty-two percent of imports originating in the Persian Gulf region.[366]

The mutual agreement by South China Sea states could also have the effect of reducing the presence of external states in the region. China has made clear that it identifies the United States as a source of militarization and as "the most dangerous external factor endangering peace and stability" in the region.[367] This distaste for outside stakeholders also applies to groups such as AUKUS, made up of the United States, the United Kingdom, and Australia.[368] Agreement among the littoral states to an arrangement outside of UNCLOS would reduce their tolerance of states like the United States conducting freedom of navigation operations. Littoral states could also reduce their own patrols of the South China Sea in attempts to safeguard their claims. Again, this development would particularly benefit China given that their efforts to defend artificial islands has "facilitated the pervasive maritime presence" of their navy.[369]

The creation of such a legal regime would not require the resolution of all territorial disputes to greatly benefit the region from an economic standpoint. A state exploiting deep-sea resources from a plot allocated by the regime would not have the right to attach any UNCLOS-esque rights to that plot. The regime would solely create a market for states to submit plots for potential exploitation by neighbor states. China should realize that the efficient exploitation of deep-sea resources in the region depends on littoral states being able to safely invest in extractive projects, which

364. *See* Weinberger, *supra* note 301, at 17.

365. *Id*.

366. *Id*.

367. Press Release, People's Republic of China, Statement by Spokesperson of the Chinese Embassy in the Phil. on the China-related remarks of the US Nat'l Sec. Advisor (Nov. 24, 2020).

368. *See* David E. Sanger and Zolan Kanno-Youngs, *Biden Announces Defense Deal With Australia in a Bid to Counter China*, N.Y. TIMES (updated Oct. 11, 2021), https://www.nytimes.com/2021/09/15/us/politics/biden-australia-britain-china.html [https://perma.cc/X866-MM6S.

369. International Crisis Group, *supra* note 31, at i.

won't occur if China insists on maintaining its current level of bullying over territorial claims.[370]

To the extent that littoral states prefer UNCLOS to other means of decreasing tensions and wasteful posturing in the South China Sea, it's because UNCLOS requires parties to mutually concede certain rights in exchange for certain benefits. If China is going to convince its neighbors to give up on UNCLOS as the proper regime for governance of the Sea, then China will have to provide some of those same benefits, even if at a cost to itself, to gain others' compliance.[371] China's current approach, characterized by violence and threats, has done little to attract littoral states to a regional regime led by their aggressive neighbor.[372] For a legal regime grounded in the allocation of property rights to succeed, China will have to show a willingness to "bind itself to existing and future laws and rules."[373]

CONCLUSION

A stable resolution of disputes in the South China Sea and the efficient distribution of the resources therein will not result from any arrangement involving external actors. China has rejected rulings imposed by external actors and authorities and will do so again. Neither amending UNCLOS nor asking external states like the United States to help enforce UNCLOS will work for that reason. The states bordering the South China Sea should lead in establishing various rights within the region and permitting states to bargain for the use of those rights. This regime would tap into the important conditions for successful Coasian bargaining: complete property rights and low to no transaction costs. In the words of the International Crisis Group, this regime would constitute a "cooperative regime for managing and apportioning the Sea's resources."[374]

Odds of compliance with this framework would increase for several reasons. First, more so than UNCLOS, the framework would create a degree of interdependence in which compliance generates substantial rewards. A regime based on rewards, rather than penalties, is more

370. *See id*. at ii (noting that China should "internalise that the achievement of many of its regional goals requires buy-in from its neighbours.").

371. *See* Stephen Walt, *China Wants a 'Rules-Based International Order,' Too*, FOREIGN POL'Y (Mar. 31, 2021), https://foreignpolicy.com/2021/03/31/china-wants-a-rules-based-international-order-too [https://perma.cc/R4B3-8BCZ].

372. *See* International Crisis Group, *supra* note 31, at 28.

373. *Id*. at 33.

374. *Id.* at 7.

politically tenable and more aligned with economic theory.[375] Second, a South China Sea in which states did not feel the need to defend their rights against their neighbors nor contest the rights asserted by their neighbors would mark a significant value proposition in comparison to current projections—i.e., states making ever-larger investments in their respective navies.[376] The security of rights would make the benefits arising from the agreement greater than the costs of entering, thereby inducing the littoral states to join.[377] Third, China is not responsive to the traditional means of thinking about compliance—reciprocity, reputation, and retaliation.[378] For example, despite states around the world chastising China for not adhering to the tribunal's decision, China has not substantially altered its behavior.[379] Fourth, littoral states, including China, would benefit from realizing the economic potential of the South China Sea and improving their respective energy security. China's unrelenting efforts to assert dominance over the region has delayed Malaysia, the Philippines, Vietnam, and others from searching for hydrocarbons and doing so while free of interference from Chinese vessels.[380] And, fifth, the regime could provide China with an outsized role in its formation, so long as China credibly binds itself to the regime's obligations.[381]

This paper does not dive into the specific details of a new legal regime to allocate the resources of the South China Sea. The International Crisis Group provides ideas for how to do so, but their approach leans too heavily on UNCLOS.[382] What is essential is that the new regime avoids the features of UNCLOS that China finds so egregious—namely, rules that conflict with its historical claims. A better starting point for a potential regime is the 1920 Svalbard Treaty, in which sovereignty of the land feature in question fell to one nation but resource rights belonged to all signatories.[383]

Though observers previously cited the absence of urgency for the lack of cooperative arrangements to extract deep-sea resources in the South

375. *See* Ann van Aaken & Betül Simsek, *Rewarding in International Law*, 115 AM. J. INT'L L. 195, 197 (2021) (noting that rewards have the potential to be "pareto efficient because they make one country better off and no country worse off").

376. *See id*. at 203.

377. *See id*. at 200.

378. *See id.* at 203.

379. Some external actors might even support this framework in recognition that continuing to spend resources on retaliatory efforts against China in hopes of China changing its behavior was wasteful. *See id*. at 201.

380. International Crisis Group, *supra* note 31, at i.

381. *Id*. at 7.

382. *See id*. at 27-34.

383. *See generally* The Svalbard Treaty, Feb. 9, 1920, 43 Stat. 1892, 2 L.N.T.S. 7.,

China Sea,[384] the energy market has since taken a drastic turn. Russia's initiation of war in Ukraine in 2022 forced China to place a higher priority on ensuring its energy security.[385] The conflict forced the government to "step up production and boost reserves to keep prices under control[.]"[386] Government officials even went so far as to admit that their safe energy supply had been imperiled by the war.[387] Researchers at the Center for Strategic and International Studies believe that the conflict may have longer term negative economic consequences if China fails to take appropriate measures.[388] As China looks to diversify its energy portfolio, deep-sea resources in the South China Sea—extracted by China or its neighbors along the Sea—may present enough of a necessary supply boost that China will consider a new legal regime to help bring that supply to market.

The urgency now present may distinguish a new effort to formalize a regional cooperative arrangement from prior attempts to bring stability to the region through a multilateral agreement. Since 1992, when the concept of a Code of Conduct to manage tensions in the South China Sea first emerged at ASEAN, the Code has inched along at an incredibly slow pace.[389] Thirty years later, the text of the Code has yet to have been ratified.[390] Without a meaningful impetus, the states have high-centered on various points of disagreement.

If efforts to resolve the South China Sea dispute outside of UNCLOS do not occur, then the odds may tip toward China eventually just using "force to expel others and maintain its control."[391] If China's energy security further diminishes or if the U.S. and its allies become more insistent on challenging China's claims, then the region will be on the brink of a substantial conflict. Now is the time for littoral states to make the most of a new thorn in China's side—the war in Ukraine—and get the

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384. *See* International Crisis Group, *supra* note 31, at 8.

385. Kevin Yao and Muyu Xu, *China Moves to Assure Energy Supply Amid Ukraine Crisis*, REUTERS (Mar. 7, 2022, 12:57 AM), https://www.reuters.com/markets/commodities/china-says-confident-it-can-ensure-energy-supply-despite-serious-challenges-2022-03-07 [https://perma.cc/P5CP-YTPT].

386. *Id*.

387. *Id*.

388. Scott Kennedy, *China's Economy and Ukraine: All Downside Risks*, CSIS (Mar. 3, 2022), https://www.csis.org/analysis/chinas-economy-and-ukraine-all-downside-risks [https://perma.cc/A4ZZ-SYV4].

389. *See, e.g.*, International Crisis Group, *supra* note 31, at 15–17 (marching through the long history of the Code of Conduct).

390. *See id*.

391. *Id*. at 7.

assurances they need from the People's Republic to start extractive efforts in the South China Sea without fear of harassment.