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Resource Sharing and Joint Development in the South China Sea: Exploring Avenues of Cooperation

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Contents

- Abstract
- Introduction
- Framework: Stakeholder engagement in resource sharing and management
- Feasibility of a commercial agreement between oil companies
- Integrating marine environmental protection into joint oil and gas exploration agreements
- Sharing of marine resources among fishermen
- Conclusion

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ABSTRACT

The Philippines and China signed a Memorandum of Understanding (MoU) in Cooperation on Oil and Gas Development, demonstrating their willingness to explore joint development as a pathway to collaboration, notwithstanding their territorial disputes. Recent commentaries on joint development are mostly framed on legal challenges, South China Sea (SCS) rows, geopolitics, and state-centric security issues. However, there have been no extensive discussions on the potential contributions from non-state stakeholders that can make joint development agreements environmentally sound, sustainable, and less political. These stakeholders are the oil companies, fishermen and coastal communities. In this regard, this NTS Insight explores potential roles of these stakeholders in promoting joint initiatives to share and develop resources in the SCS. It argues that the engagement and participation of non-state stakeholders in resource sharing and joint management must be pursued to address key non-traditional security challenges in the SCS. It also examines mechanisms to integrate marine environmental protection and sustainable fishing management into joint development agreements.

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Introduction

The Philippines and China signed a Memorandum of Understanding (MoU) on Cooperation on Oil and Gas Development during the state visit of Chinese President Xi Jinping in Manila in November 2018. Both countries agreed to establish an Inter-governmental Joint Steering Committee and Inter-entrepreneurial Working Groups that will negotiate and pursue cooperation agreements for oil and gas development within one year. China identified China National Offshore Oil Corporation (CNOOC) as its representative for each working group. Meanwhile, the Philippines designated the Philippine National Oil Company-Exploration Corporation (PNOC) and private service contractors for oil exploration to represent the country. The joint exploration, if successful in finding oil and gas resources presumably in the disputed South China Sea (SCS), would pave the way for another cooperation agreement on the exploitation of resources found. The agreement highlights the critical role of Chinese and Philippine oil firms (state-owned and private) and their service contractors as enterprise-representatives of their respective states.²

The Philippine-China MoU may signify their readiness to open avenues of cooperation focusing on joint use and development of the assets of the SCS, notwithstanding the contentious issue of sovereignty or ownership of resources. It also indicates the importance of oil exploration companies and public-private partnership in any future joint development. Dr Federico M Macaranas, a Filipino economist, asserted that “[i]t is joint use of assets, not ownership of assets that matters for our relations,”³ referring to improving Sino-Philippine relations.

The SCS is enormously abundant in marine resources and all claimant states have been asserting their exclusive rights to explore, exploit and utilise them. Unilateral initiatives by any of the claimant states to develop/exploit **(1) oil, gas and hydrocarbons and (2) fisheries and marine resources** have caused stand-off incidents involving naval/coast guard vessels and diplomatic spats. A joint development agreement has been suggested as an opportunity for cooperation for claimant states to exploit and share resources (fisheries, oil and gas, or minerals) found within their disputed territorial claims.⁴ A joint development agreement will permit claimant states to set aside the question of sovereignty in the disputed areas so as to jointly exploit natural resources.⁵

However, the prominent role of state-led cooperation tends to dominate the discussions on joint use and development of resources. Furthermore, recent commentaries on this issue are mostly framed on legal challenges, territorial rows, geopolitics, and state-centric security issues.⁶ This NTS Insight aims to fill in the gap in the recent literature on joint development in the SCS. There have been no extensive discussions on the potential contributions from non-state stakeholders that can make joint development agreements environmentally sound, sustainable, and less political. These stakeholders are **the oil companies, fishermen and coastal communities**.

² Pia Ranada, “DOCUMENT: Oil, gas development deal between Philippines, China,” *Rappler*, 26 November 2018, <https://www.rappler.com/nation/217559-memorandum-understanding-philippines-china-oil-gas-development-deal>

³ Yang Han, “China-Philippine ties hold fruitful promise,” *China Daily*, 27 October 2017 <https://www.chinadailyhk.com/articles/221/170/190/1509111857556.html>

⁴ Philip Vincent Alegre, “Converging Joint Development and Philippine National Interests,” *Commentaries*, Asia-Pacific Pathways to Progress Foundation Inc., 22 December 2017, <http://appfi.ph/resources/commentaries/1795-converging-joint-development-and-philippine-national-interests>.

⁵ David M. Ong, “Joint Development of Common Offshore Oil and Gas Deposits: “Mere” State Practice or Customary International Law?” *The American Journal of International Law*, Vol. 93, No. 4 (1999): pp. 771-804.

⁶ Richard Heydarian, “The Perils of a Joint Development Agreement in the South China Sea,” *AMTI Update*, 27 April 2018, <https://amti.csis.org/perils-philippine-china-joint-development-scs/>; Philip Vincent Alegre, “Converging Joint Development and Philippine National Interests,” *Commentaries*, Asia-Pacific Pathways to Progress Foundation Inc., 22 December 2017, <http://appfi.ph/resources/commentaries/1795-converging-joint-development-and-philippine-national-interests>

This NTS Insight argues that the nature of engagement of non-state stakeholders in resource sharing and management must be pursued amidst vital non-traditional security issues in the SCS, namely, energy security challenges, declining fish stocks, illegal fishing, and marine environmental degradation. Apart from states concerned, other important stakeholders such as oil companies, fishermen and coastal communities can significantly contribute to joint use and development of resources in the SCS. In this regard, this NTS Insight investigates potential roles of these stakeholders in promoting joint initiatives to share and develop resources in the SCS.

Framework: Stakeholder engagement in resource sharing and management

The framework on stakeholder engagement in natural resource sharing management is used to examine the key roles of companies, fishermen and coastal communities. Local stakeholders are individuals or groups who directly depend on or influence the specific goals of resource management or conservation action (e.g. energy companies, indigenous landholders, farmers, fishers, local non-governmental organizations).⁷ Owing to the complexities of the marine environment and its many uses as a public good, various non-state stakeholders have diverse interests in the outcome of the environmental and resource management system. These stakeholders include those in aquaculture, oil exploitation, commercial fishing, recreational fishing, shipping, and marine protected areas (MPAs), among others.⁸

In the context of ocean governance and management, multi-stakeholder participation is a key element of an effective resource management system.⁹ The UN Environment Program's 2017 report on regional oceans governance accentuates the importance of multi-stakeholder participation and public-private partnerships in sustainable management of maritime resources. Partnerships, in their various dimensions, are acknowledged as the basis for delivery of Sustainable Development Goal (SDG) 14 and other ocean-related targets. Partnerships in ocean governance can entail vertical (across, for example, regional-global scales), horizontal (across sectors) and multi-stakeholder partnerships (including civil society, the private sector and others). Normally, such partnerships involve state institutions, civil society organizations, research institutions, regional and international organisations, private companies and faith-based organisations. Across these sectors, stakeholders can deliberate on shared issues of interest. Given the crucial role of the private sector in developing hydrocarbon and marine resources, private-public partnerships can contribute to cross-sectoral cooperation, as well as consolidated efforts for achieving ocean-related SDGs. A broad spectrum of stakeholders, including from the private sector, should participate in resource management and decision-making.¹⁰

Multi-stakeholder engagement can bring about greater transparency, legitimacy, and trust in the regulatory system¹¹ and can therefore lead to sustainable compliance.¹² Scholars of ocean management and resource sharing explain relevant

⁷ Eleanor Streling, "Assessing the evidence for stakeholder engagement in biodiversity conservation," *Biological Conservation*, Vol. 209 (2018): pp. 159-171.

⁸ Robert Pomeroy and Fanny Douvère, "The engagement of stakeholders in the marine spatial planning process," *Marine Policy*, Vol. 32, No. 5 (2008): pp. 816– 822.

⁹ C.E. O'Keefe, G.R. DeCelles, "Forming a partnership to avoid bycatch," *Fisheries*, Vol. 38 (2013): pp. 434-444,

M.S. Reed, "Stakeholder participation for environmental management: A literature review," *Biological Conservation*, Vol. 141 (2008): pp. 2417-243

¹⁰ UN Environment, *Realizing Integrated Regional Oceans Governance – Summary of case studies on regional cross-sectoral institutional cooperation and policy coherence* (Nairobi: UN Environment Regional Seas Programme, 2017)

¹¹ C.E. O'Keefe, G.R. DeCelles, "Forming a partnership to avoid bycatch," *Fisheries*, Vol. 38 (2013): pp. 434-444,

M.S. Reed, "Stakeholder participation for environmental management: A literature review," *Biological Conservation*, Vol. 141 (2008): pp. 2417-243

¹² R. Lewison, A.J. Hobday, S. Maxwell, E. Hazen, J.R. Hartog, D.C. Dunn, et al., "Dynamic ocean management: Identifying the critical ingredients of dynamic approaches to ocean resource management," *Bioscience*, Vol. 65 (2015): pp. 486-498.

outcomes of the inclusion of non-state stakeholders: 1) higher quality decisions and policies that are appropriate to domestic sociocultural and ecological contexts; 2) institutionalising mutual understanding and trust, hence lessening conflicts among stakeholders; 3) stakeholder ownership driven by the support of coastal communities, resulting in successful implementation; 4) deep understanding of the impact of human activities on the ecosystem that can lead to sustainable resource management; 5) detecting, foreseeing and resolving areas of conflict among resource users; and 6) the significant reduction of resource management's implementation cost.¹³

Globally, many scientists, policy makers and resource managers agree that the proactive participation of ocean resource users is a primary factor for a sustainable environmental management regime. Multi-stakeholder engagement emboldens 'ownership' of the plan, engenders trust among all resource users, and eases conflict.¹⁴

In the context of joint oil and gas exploration, cross-sectoral ocean governance is a multi-faceted framework in which various stakeholders perform a distinct and critical role in managing and regulating offshore oil and gas activities, directly and indirectly. Oil and gas firms, business associations and standards organisations offer their relevant technical expertise, operating experiences, best practices and standards to help shape governance norms. The involvement of the private sector such as oil companies in multi-sectoral efforts to strengthen resource management and sharing is chiefly vital to align incentives and ensure environmental compliance. Since joint oil exploration is to be undertaken by companies, they must be included in institutionalising standards and best practices on combatting marine pollution, together with other stakeholders. In the Arctic Ocean, for instance, there have been concerted activities among consortia of companies on oil spill response technology and mutual assistance in response capabilities. The partnership between resource users and relevant stakeholders can advance sustainable joint development by leveraging their expertise, pooling their resources, and sharing lessons learnt and best practices¹⁵

Furthermore, other key stakeholders, such as NGOs, academia, and local communities have important contributions to marine environmental governance such as useful scientific findings, environmental management mechanisms and other inputs to local environmental law enforcement.¹⁶ Meanwhile, in shared or co-managed fisheries, a community-based approach necessitates active participation of fishermen and local communities in the regulatory and environmental law enforcement. In this regard, there is robust motivation for compliance, since the fishermen themselves are part of the formulation, rationalisation and implementation of rules and regulations meant to protect their livelihood.¹⁷

¹³ Elaenor Streling, "Assessing the evidence for stakeholder engagement in biodiversity conservation," *Biological Conservation*, Vol. 209, (2017): pp. 159-171; Robert Pomeroy and Fanny Douvere, "The engagement of stakeholders in the marine spatial planning process," *Marine Policy* Vol. 32, No. 5 (2008): pp. 816– 822.

¹⁴ Robert Pomeroy and Fanny Douvere, "The engagement of stakeholders in the marine spatial planning process," *Marine Policy* Vol. 32, No. 5 (2008): pp. 816– 822.

¹⁵ Charles Ebinger, John P. Banks and Alisa Schackmann, "Offshore Oil and Gas Governance in the Arctic: A Leadership Role for the US," *Policy Brief 14-01*, Energy Studies Institute at Brookings, March 2014.

¹⁶ *Ibid.*

¹⁷ Robert Pomeroy and Fanny Douvere, "The engagement of stakeholders in the marine spatial planning process," *Marine Policy*, Vol. 32, No. 5 (2008): pp. 816– 822.

Feasibility of a commercial agreement between oil companies

Addressing the broader issue of energy security is inherent in the proposed joint oil exploration in the SCS, with claimant states seeking diversification of energy sources amidst rising domestic demand.¹⁸ Official estimates indicate that the SCS may possess huge reserves of oil, gas and hydrocarbons. According to the US Energy Information Administration, there are 11 billion barrels of oil and 190 trillion cubic feet (tcf) of gas beneath the SCS.¹⁹ Furthermore, the SCS may have 5–22 billion barrels of undiscovered oil and 70–290 trillion cubic feet of undiscovered gas.²⁰ Meanwhile, the CNOOC claimed that there are 125 billion barrels of oil and 500 tcf of gas—equivalent to one-third of China’s total petroleum reserves- in the SCS.²¹ Claimant states have three options concerning these huge reserves- refrain from exploiting the resources, exploit them unilaterally, or ink a joint development pact with other claimant countries.

But in the context of joint development, a purely commercial agreement between companies may be more feasible to execute and, arguably, may be less susceptible to domestic public opposition than a contentious government-to-government oil and gas exploration agreement. The recent MoU between China and the Philippines on oil and gas exploration appears to adopt this track as it encourages the oil companies (state-owned and private firms) of the two claimant states to jointly study the feasibility of joint exploration.

A commercial arrangement may appear to be an alternative to a formal agreement for exploration between governments, which may be misinterpreted as acknowledging the other country’s claims. For example, since 2013, Manila’s PXP Energy, together with the Philippine National Oil Company (PNOC), have been talking with CNOOC on a possible joint exploration agreement in the Reed Bank, an immense offshore area claimed by both the Philippines and China.²² The 2018 MoU between China and the Philippines was inked in light of their improving diplomatic and economic ties. Since 2005, the Philippines has failed to unilaterally develop the Reed Bank due to maritime tensions with China, which has repeatedly deployed patrol vessels to the vicinity of the Reed Bank to block PXP Energy’s survey ships in recent years.²³ But in the current context, once the stated joint study stipulated in the MoU leads to a commercial arrangement between Chinese and Philippine companies, it may present an opportunity for both countries to successfully explore, exploit and share natural gas from the Reed Bank.

¹⁸ Frank Umbach, “The South China Sea Disputes: The Energy Dimensions,” *RSIS Commentary*, 4 May 2017, <https://www.rsis.edu.sg/rsis-publication/rsis/co17085-the-south-china-sea-disputes-the-energy-dimensions/#.Wm7ttuex-70>

¹⁹ Ibid.

²⁰ US Energy Information Administration (EIA), “South China Sea,” 2013, <https://www.eia.gov/beta/international/regions-topics.cfm?RegionTopicID=SCS>

²¹ Emily Meierding, “Joint development in the South China Sea: Exploring the prospects of oil and gas cooperation between rivals,” *Energy Research & Social Science*, Vol. 24 (2017): pp. 65-70.

²² Danessa Rivera, “PXP Energy sends feelers to CNOOC for possible joint West Philippine Sea exploration,” *The Philippine Star*, 2 May 2018, <https://www.philstar.com/business/2018/05/02/1811234/pxp-energy-sends-feelers-cnooc-possible-joint-west-philippine-sea-exploration#hgDcjh1uyuGYRe3H.99>

²³ Richard Heydarian, “Sharing resources could calm seas for China and Philippines,” *South China Morning Post*, 26 July 2017. <http://www.scmp.com/news/china/diplomacy-defence/article/2104097/beijing-sees-joint-energy-venture-manila-model>

Location of the Reed Bank in the South China Sea



Source: Wikimedia Commons, [Reedbank.jpg](#), under the [Creative Commons Attribution 3.0 License](#)

Chinese and Philippine oil firms may consider to examine existing commercial agreements in the region such as the joint development agreement between Malaysia and Vietnam and the joint development agreement between Vietnam and Thailand in their overlapping claims in the gas-rich Gulf of Thailand. Embedded in these existing commercial pacts are production sharing contracts whereby the rights of each country to develop and utilise oil and gas are managed by their respective national oil companies: Petronas, PTT and PetroVietnam.²⁴

²⁴ Thomas Grieder, "Bridge Over Troubled Waters: Energy Cooperation in the South China Sea and the Gulf of Thailand," in Shicun Wu, Keyuan Zou (eds) *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation*, pp. 225-240 (New York: Routledge, 2016).

Location of Malaysia-Vietnam JDA



Source: Author, 2019

Adopted in Kuala Lumpur, the 1992 joint development agreement between Malaysia and Vietnam in their overlapping claims in the gas-rich Gulf of Thailand is a relatively straightforward commercial arrangement whereby each country's rights are managed by their respective national oil companies: Petronas and PetroVietnam.²⁵ The production sharing contracts given to the two state-owned firms, together with private company Talisman Malaysia Ltd.,²⁶ include equal sharing of all costs, expenses, liabilities and benefits resulting from petroleum activities in their joint development areas. Similarly, Malaysia and Thailand reached agreements in 1979 and 1990, concluded in Kuala Lumpur, to jointly explore and exploit hydrocarbons in their overlapping continental shelf in the lower part of the Gulf of Thailand.²⁷ The agreements resulted in Production Sharing Contracts given to Petronas and PTT of Thailand, together with private energy firm Hess Corporation.²⁸ In these two cases of joint development agreements, resource sharing has been successfully implemented by oil companies with natural gas production benefitting Malaysia, Thailand, and Vietnam without the need to compromise sovereignty claims.²⁹

Furthermore, companies can also set up an organised management system in the disputed areas, contributing to overall stability in the relations between claimant states. The sustainability of cooperation in joint development areas is primarily due to the equitable nature of management system governing exploration and exploitation of hydrocarbons.³⁰ For instance, the commercial agreement signed by Petronas and PetroVietnam in 1993 led to the establishment of a Joint Coordination Committee (JCC) to manage the joint development area. JCC consists of eight members equally nominated by Petronas and PetroVietnam with equal voting rights. Meanwhile, Malaysia-Thailand joint development area is managed

²⁵ C. Schofield, "Defining areas for joint development in disputed waters," in S. Wu & N. Hong (eds.) *Recent Developments in the South China Sea Dispute: The Prospect of a Joint Development Regime*, pp. 78-98 (London: Routledge, 2014).

²⁶ Petroliaam Nasional Berhad / Vietnam Oil & Gas Group, "PETRONAS, PetroVietnam Extend PM3CAA PSC in Malaysia-Vietnam Waters to 2027," *Rigzone*, 9 May 2016.

²⁷ Thomas Grieder, "Bridge Over Troubled Waters: Energy Cooperation in the South China Sea and the Gulf of Thailand," in Shicun Wu, Keyuan Zou (eds) *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation*, pp. 225-240 (New York: Routledge, 2016).

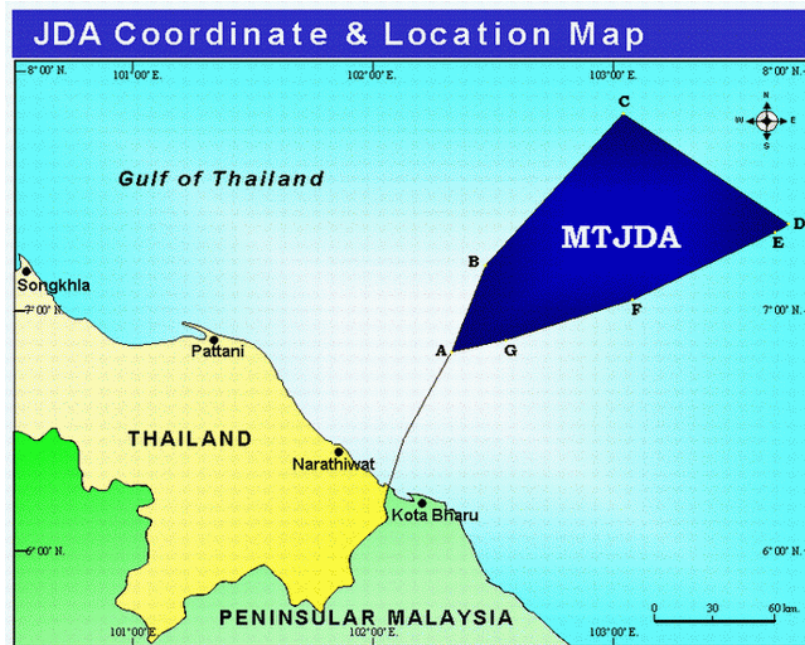
²⁸ *Malaysia-Thailand Joint Development Authority, About JDA, n.d.*, https://www.mtja.org/about_jda.php

²⁹ Lan-Anh T. Nguyen, "Joint Development between Malaysia and Vietnam," June 2011, <https://cil.nus.edu.sg/wp-content/uploads/2011/06/Session-5-Lan-Anh-Joint-development-between-Malaysia-Vietnam-pdf.pdf>;

³⁰ Thomas Grieder, "Bridge Over Troubled Waters: Energy Cooperation in the South China Sea and the Gulf of Thailand," in Shicun Wu, Keyuan Zou (eds) *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation*, pp. 225-240 (New York: Routledge, 2016).

by a Joint Authority composed of two co-chairs and 12 members of Malaysian and Thai nationals, appointed in equal number by their respective governments.³¹ Payment for royal taxes, liabilities, cost of petroleum operations, revenues, and resolving operational disputes are equitably shared by the involved companies.³² As a key lesson from these existing commercially driven joint development agreements, the fair nature of the co-management structure jointly setup by the oil companies contributes to the sustainability of cooperation in joint development areas.

Location of Malaysia-Thailand JDA



Source: Malaysia-Thailand Joint Development Authority, *About JDA*, n.d., https://www.mtja.org/about_jda.php

Integrating marine environmental protection into joint oil and gas exploration agreements

In the context of the recent MoU on joint oil and gas exploration, Philippine and Chinese oil firms should seriously consider the inclusion of norms and best practices on preventing and mitigating marine pollution in their commercial arrangements and potential joint operations in the future. It must be noted that existing joint development agreements (e.g., Malaysia-Vietnam, Vietnam-Thailand, and Malaysia-Vietnam-Thailand) in the region do not contain provisions on the prevention and control of marine pollution caused by offshore operations.

³¹ <https://www.mtja.org/organization.php>

³² Lan-Anh T. Nguyen, "Joint Development between Malaysia and Vietnam," June 2011, <https://cil.nus.edu.sg/wp-content/uploads/2011/06/Session-5-Lan-Anh-Joint-development-between-Malaysia-Vietnam-pdf.pdf>; Thomas Grieder, "Bridge Over Troubled Waters: Energy Cooperation in the South China Sea and the Gulf of Thailand," in Shicun Wu, Keyuan Zou (eds) *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation*, pp. 225-240 (New York: Routledge, 2016).

The MoU on oil and gas exploration was signed against a backdrop of deteriorating marine ecosystems in the SCS. Therefore, oil companies and their private service contractors that will be part of the Philippine-China joint exploration and development must also be engaged and included in the sustainable management of resources in the SCS. This is due to the fact that offshore petroleum operations may potentially cause transboundary pollution.³³ As seen globally, from joint exploration to joint development, all phases of offshore petroleum operations may leak hazardous substances into the marine environment and contaminate fishery resources. Other marine resource users, especially fishermen and coastal communities, would be severely affected.³⁴ This accentuates the need for multi-stakeholder engagement particularly in the context of multiple natural resource management in the SCS.

Hence, in any future joint venture by oil companies of claimant states in the SCS, cooperation between governments and companies will be required to address the environmental consequences of increasing offshore activities. More importantly, sustainable joint development of resources and management of marine pollution from offshore oil and gas activities have to be included in the agreements between companies.

There are a few examples of cooperation agreements that include environmentally sustainable development of marine resources. France and Spain can be identified as the pioneers of a joint development that does not neglect the marine environment. In fact, in their 1974 joint development agreement, they agreed that every effort must be made to *“prevent the explorations of the continental shelf of the Bay of Biscay and the exploitation of its natural resources from threatening the ecological balance and legitimate uses of the marine environment, and shall consult with each other to this end”*.³⁵ Such a change and progressive approach adopted by Spain and France in their agreement explains their recognition and awareness of the threats that natural resources development activities may cause to the marine environment.³⁶

The 1976 Norway-UK Frigg Field Agreement is another joint development agreement that considers marine environmental protection. Norway and the UK agreed *“to ensure that the exploitation of Frigg Gas or the operation of any installation or pipeline involved in that exploitation shall not cause pollution of the marine environment or damage by pollution to the coast-line, shore facilities or amenities, or vessels or fishing gear of any country.”*³⁷ These two examples of joint development clearly point out that joint oil and gas exploitation can be done without neglecting potential consequences on the marine environment. In this regard, negotiators from the China-Philippines working group, including the oil companies, should therefore consider these cited models as they explore the pathway towards a sustainable joint development agreement in the future.

³³ Youna Lyons, “Transboundary Pollution from Offshore Oil and Gas Activities in the Seas of Southeast Asia,” Chapter 7 in R. Warner and S. Marsden (eds.), *Transboundary Environmental Governance in Inland, Coastal and Marine Areas* (Farnham, Surrey, England ; Burlington, VT : Ashgate, 2012).

³⁴ UNEP and The E&P Forum. “Environmental Management in Oil and Gas Exploration and Production: An Overview of Issues and Management Approaches,” *Joint E&P Forum/UNEP Technical Publication* (London: E&P Forum, Paris: UNEP, 1997).

³⁵ Article 7 of the Convention between the Government of the French Republic and the Government of the Spanish State on the Delimitation of the Two States in the Bay of Biscay, signed on 29 January 1974 and entered into force on 5 April 1975

³⁶ Qian Hongdao and Hamid Mukhtar, “Joint Development Agreements: Towards Protecting the Marine Environment under International Law,” *Journal of Law, Policy and Globalization* Vol. 66 (2017).

³⁷ Article 23 of the Agreement between the Government of the United Kingdom of Great Britain and the Northern Ireland and the Government of the Kingdom of Norway Relating to the Exploitation of the Frigg Field Reservoir and the Transmission of Gas therefrom to the UK, signed on 10 May 1976 and entered into force on 22 July 1977

Sharing of marine resources among fishermen

As indicated in the preceding section, oil companies are not the only resource users in the SCS. Fishermen and coastal communities from all claimant states have a shared interest in the sustainable management of fishery resources. The SCS is one of the world's top five most productive fishing zones, contributing about 10 million tons of fish or 12 percent of global fish catch in 2015. However, according to the South China Sea Expert Group, the SCS “*is teetering on the edge of a fisheries collapse, and the only way to avoid it is through multilateral cooperation in disputed waters.*”³⁸ Hence, joint use of fisheries assets in a sustainable manner should be pursued in the form of joint management of fishing zones among claimant states. Joint management can help address various non-traditional security issues such as food security, environmental security and the economic security of coastal communities that depend on SCS' rich marine and fisheries resources.

SCS' abundant fisheries resources provide jobs to around 3.7 million people, which is almost an underestimated figure given the prevalence of illegal, unregulated, and unreported fishing in the region.³⁹ The extent of overfishing and illegal fishing in the region cannot be overemphasised. For example, in the Philippines, 10 out of the 13 designated fishing grounds have been overfished. Consequently, the average daily haul of a Filipino fisherman has fallen to 4.76kg from as much as 20kg in the 1970s.⁴⁰ In Indonesia, 90 percent of the roughly 5,400 local and foreign vessels that ply its territorial waters are considered illegal and unregulated, putting the fishing sector's losses to poaching at as high as US\$25 billion annually.⁴¹

Collaboration among fishermen from all claimant states in fisheries co-management can help address marine environmental degradation that undermines their livelihood. One major challenge faced by all fishermen from SCS littoral states is the depletion of fish stocks. Total fish stocks in the SCS have been depleted by 70-95 percent since the 1950s and harvests have declined by 66-75 percent over the last 20 years.⁴² Coral reefs of the SCS have been declining at a rate of 16 percent per decade.⁴³ The depletion of fish stocks and destruction of coral reefs raise economic, food and health security concerns as seafood provides a major source of protein and income for millions of poor people in coastal areas. The countries fringing the SCS are among the most reliant in the world on fish as source of nutrients. Fish catch declines may cause micronutrient deficiencies in developing nations around the SCS.⁴⁴

³⁸ South China Sea Expert Working Group, “A Blueprint for Fisheries Management and Environmental Cooperation in the South China Sea,” *AMTI Update*, 13 September 2017, <https://amti.csis.org/coc-blueprint-fisheries-environment/>

³⁹ Clive Schofield, Rashid Sumaila, and William Cheung, “Fishing, not oil, is at the heart of the South China Sea dispute,” *The Conversation*, 16 August 2016, <https://theconversation.com/fishing-not-oil-is-at-the-heart-of-the-south-china-sea-dispute-63580>

⁴⁰ “South China Sea: Fish wars,” *Inquirer.net*, 3 April 2016, <http://globalnation.inquirer.net/138297/south-china-sea-fish-wars#ixzz55eNcZFpl>

⁴¹ *Ibid.*

⁴² South China Sea Expert Working Group. 2017. A Blueprint for Fisheries Management and Environmental Cooperation in the South China Sea. AMTI Update, 13 September. Available at: <https://amti.csis.org/coc-blueprint-fisheries-environment/>, <https://amti.csis.org/coc-blueprint-fisheries-environment/>

⁴³ *Ibid.*

⁴⁴ C. Golden, “Nutrition: Fall in fish catch threatens human health,” *Nature* Vol. 534, No. 7607 (2016): pp. 317-320.

Share of Fish in Animal Protein Intake in Selected SCS States in 2013

Country	Fish as Part of Animal Protein Consumption
Indonesia	52.7%
Malaysia	38.8%
The Philippines	37.5%
Thailand	33.6%
Vietnam	27.3%
China	21.2%
World	16.2%

Source: Hongzhou Zhang, "Fisheries cooperation in the South China Sea: Evaluating the options," *Marine Policy* Vol. 89 (2018): pp. 67–76.

The depletion of fish stocks is aggravated by the deterioration of marine environments due to destructive fishing practices such as the use of dynamite and cyanide on reefs, clam poaching, and illegal fishing.⁴⁵ For instance, there was even a report of Chinese and Filipino poachers jointly plundering endangered species.⁴⁶ The collaboration among fishermen and coastal communities around the SCS can help advance sustainable fishing and protection of marine assets. Fisheries co-management that involves proactive participation of fishermen and local communities can lead to effective management of critical habitats and marine resources, including fish stocks.⁴⁷

Against this background, fishermen and coastal communities should proactively participate in the sustainable management and sharing of transboundary fish stocks. Peaceful co-existence among fishermen from claimant states of the SCS is not a new phenomenon. In fact, the SCS has been a regional common for generations. In the past, fishermen from all of the surrounding countries could co-exist peacefully and even trade among themselves.⁴⁸ This was the case in the Scarborough Shoal, a rich fishing ground that is claimed as territory by both China and the Philippines. Even the Permanent Court of Arbitration's ruling on the SCS states that the Scarborough Shoal has been a traditional fishing zone for fishermen from various claimant states.⁴⁹ In the past, when Taiwanese, Chinese, Filipino and Vietnamese fishermen were converging inside the shoal, it was expected for them to assist each other.⁵⁰ The peaceful co-existence was reversed in 2012, after a tense stand-off between Chinese and Philippine coast guard vessels. China had placed the shoal under its de-facto control and barred Filipino and non-Chinese fishermen.⁵¹

This episode disrupted the cooperation among the fishermen in the shoal. It vividly demonstrated that individual countries' attempts to unilaterally control fisheries and marine resources have only resulted in diplomatic tensions as well as

⁴⁵ John McManus, "Offshore Coral Reef Damage, Overfishing, and Paths to Peace in the South China Sea," *The International Journal of Marine and Coastal Law* Vol. 32, (2017): 199-237.

⁴⁶ Redempto Anda, "Int'l gang seen in turtle poaching," *Inquirer.net*, 11 May 2014, <http://newsinfo.inquirer.net/601169/intl-gang-seen-in-turtle-poaching>

⁴⁷ FAO, "Small-scale fisheries - Community-based management," in FAO Fisheries and Aquaculture Department [online]. Rome. Updated . [Cited 7 September 2018], <http://www.fao.org/fishery/>

⁴⁸ Will Englund, "For some Filipino fishermen, the South China Sea dispute is personal," *The Washington Post*, 7 June 2015, https://www.washingtonpost.com/world/asia_pacific/for-some-filipinos-the-south-china-sea-dispute-is-personal/2015/06/06/e77d373a-086c-11e5-951e-8e15090d64ae_story.html?utm_term=.e0fca72f87dc

⁴⁹ Permanent Court of Arbitration, *The South China Sea Arbitration Award of 12 July 2016*, The Hague, The Netherlands, 2016.

⁵⁰ Ibid.

⁵¹ Michael Green, et al, "Countering Coercion Series: Scarborough Shoal Standoff," *Asia Maritime Transparency Initiative*, May 2017, <https://amti.csis.org/counter-co-scarborough-standoff/>

disruptions in the livelihood of fishermen and coastal communities. The economic security of affected Filipino fishermen was significantly undermined. For instance, Masinloc, one of the coastal Philippine towns located near the Scarborough Shoal, suffered severely as it lost 80 percent of its income, as reported by the Philippine Bureau of Fisheries and Aquatic Resources.⁵² Most of the town's 3,300 Filipino fishermen were financially affected by the limited access to the rich fishing ground of Scarborough Shoal.⁵³

But with the warming of ties between the Philippines and China in the past three years, Filipino military officials reported that a barter system is slowly emerging in Scarborough Shoal, as Filipino fishermen vessels are seen "co-existing harmoniously", exchanging their catch for food and other goods from their Chinese counterparts.⁵⁴ While China Coast Guard ships are still deployed near the shoal, the Philippine government encourages more Filipino fishermen to return to Scarborough Shoal.⁵⁵ However, it was reported in 2018 that Chinese coast guard personnel were harassing Filipino fishermen and asking them for fish without giving them compensation.⁵⁶

With the rising tensions among claimant states in recent years, some experts assert that fishing incidents have emerged as a major threat to peace and stability in the SCS.⁵⁷ Recent fishing incidents in the SCS are often attributed to some Chinese fishing vessels acting as a fishing militia with fishermen receiving basic military training.⁵⁸ But instead of using fishermen as 'fishing militia' asserting sovereignty on behalf of their respective states, they can help advance joint use and sharing of resources in disputed waters.

A co-management network of South China Sea fishermen may be considered to advance cooperation among them.

As seen in the Mediterranean Sea, they can organise themselves into a network, exchanging best practices and ensuring they have a voice in decision making, as primary players in the co-management of resources. This kind of cooperation among fishermen and their proactive engagement in fisheries management must be replicated in the SCS. One good model is the Mediterranean Platform of Artisanal Fishers (MedArtNet), a network consisting of artisanal fishermen in the Mediterranean Sea, with members from Spain, France, Italy and Greece. Founded in 2011, MedArtNet aims to position artisanal fishermen as owners of traditional marine ecological knowledge, as agents of change towards sustainability, and as primary players in the co-management of resources and ecosystems in the Mediterranean Sea.⁵⁹ Consequently, according to an assessment study made by the Mediterranean Network of Marine Protected Area (MPA) Managers in 2014,

⁵² Tomas Etzler, "Fishermen caught out by politics of South China Sea," *CNN*, 19 February 2013, <https://edition.cnn.com/2013/02/18/world/asia/philippines-china-scarborough-fishermen/index.html>

⁵³ Maria Eloisa Calderon, "Fishermen fight for survival as Manila mulls next step to Hague victory," *Business World*, 18 August 2016, <http://www.bworldonline.com/content.php?section=TopStory&title=fishermen-fight-for-survival-as-manila-mulls-next-step-to-hague-victory&id=132105>

⁵⁴ Jaime Laude, "Barter system emerging in disputed Scarborough Shoal," *Philippine Star*, 29 March 2018,

<https://www.philstar.com/headlines/2018/03/29/1801346/barter-system-emerging-disputed-scarborough-shoal>

⁵⁵ Carmela Fonbuena, "PH military encourages fishermen to return to Scarborough," *Rappler*, 25 April 2018, <https://www.rappler.com/nation/201069-nolcom-maritime-forum-lingayen>

⁵⁶ P. L. Viray, "Chinese coast guard continue to harass Filipino fishermen in Scarborough — report," *Philippine Star*, 8 June 2018, <https://www.philstar.com/headlines/2018/06/08/1822747/chinese-coast-guard-continue-harass-filipino-fishermen-scarborough-report#oqz4YdJr536sEk5E.99>

⁵⁷ Sam Bateman and Hongzhou Zhang, "Bigger fish to fry than militias in the South China Sea," *East Asia Forum*, 13 February 2018, <http://www.eastasiaforum.org/2018/02/13/bigger-fish-to-fry-than-militias-in-the-south-china-sea/>

⁵⁸ M. Rajagopalan, "The basic military training encompasses search and rescue operations, contending with disasters at sea, and 'safeguarding Chinese sovereignty,'" *Reuters*, 1 May 2016, <https://www.reuters.com/article/us-southchinasea-china-fishingboats-idUSKCN0XS0RS>

⁵⁹ "The Mediterranean Platform of Artisanal Fishers (MedArtNet)," Presentation at the "MPAs and fisheries: key results of the MedPAN North project," Antalya, Turkey, 28 November 2012.

“cooperation among fishermen and their proactive participation in the management at each MPA is the most important attribute to secure effective management, encompassing ecological, economic and socio-cultural components.”⁶⁰

In Southeast Asia, there are examples of fisheries co-management at the local level. For instance, in several Philippine MPAs facing the SCS, it has become common practice to create ‘sea wardens’ (*Bantay Dagat*), composed of fishermen from local coastal villages, for maritime law enforcement.⁶¹ In the Philippines’ Verde Island Passage, dubbed as the global center of shorefish biodiversity,⁶² former poachers have even formed a sea patrol unit to safeguard the marine sanctuary from illegal fishermen and poachers.⁶³ Their transformation from **being poachers to protectors** of marine life was done through educational and training campaigns on resource co-management by a local NGO, the SEA Institute.⁶⁴ In the country’s largest marine sanctuary near the SCS, Filipino fishermen and coastal communities are actively part of the co-management governance as they are empowered to gain exclusive rights to fisheries located in or near MPAs to improve the health and productivity of fish stocks.⁶⁵

Meanwhile, Vietnam introduced co-management of marine resources in the 1990s but without a legal framework.⁶⁶ In 2017, with the passage of the amended Fisheries Law, local community groups were given the legal recognition needed to effectively carry out marine resources protection at a local level, including the delegation of fishing rights. Even prior to the approval of this amended law, the Centre for Marine Life Conservation and Community Development, a local NGO, has been working on “Ecosystem Approach to Fisheries Management” project in Binh Dinh Province in central Vietnam.⁶⁷ Integral to this approach is co-management, whereby the coastal communities who rely on fisheries for their livelihood, work collaboratively with the Vietnamese government to manage the resources sustainably. With the new law, co-management groups are granted management rights and required to create their own fishery management plans,⁶⁸ thus empowering coastal communities to contribute to the sustainable management of dwindling fish stocks.

If these local initiatives are replicated, expanded, and linked with one another, it may create a broader collaborative platform wherein fishermen from all SCS states and coastal communities would not only share the transboundary fish stocks but also jointly protect dwindling fishery resources as a public good. This positive role of fishermen and coastal communities can be done especially in terms of sharing the responsibility to protect fishery resources, addressing common challenges, and developing collective norms and best practices.

⁶⁰ Antonio di Franco, Pascaline Bodilis, Pierre Thiriet, Patrice Francour, and Paolo Guidet, “Fishermen engagement in Mediterranean marine protected areas A key element to the success of artisanal fisheries management,” *MedPAN North Project*, WWF France, 2014.

⁶¹ Si Tuan Vo , John C. Pernetta, and Christopher J. Paterson, “Lessons learned in coastal habitat and land-based pollution management in the South China Sea,” *Ocean & Coastal Management* Vol. 85 (2013):pp. 230-243.

⁶² Verde Island Passage connects the South China Sea with some of the Philippines’ internal seas. SEA Institute, “Where We Work,” n.d., <http://seainstitute.org/where-we-work/>

⁶³ Jack Board, “From poacher to protector: Local communities embrace conservation of crucial marine treasure,” *Channel News Asia*, 13 March 2018, <https://www.channelnewsasia.com/news/asia/verde-island-passage-luzon-philippines-marine-conservation-9945664>

⁶⁴ The SEA Institute, “Why”, accessed on 22 January 2019. , <http://seainstitute.org/why/>

⁶⁵ Gregg Yan, “Philippines Declares Largest Marine Protected Areas”, *Amazon of the Ocean*, 8 November 2016, <http://thecoraltriangle.com/stories/philippines-declares-largest-marineprotected-area>

⁶⁶ Tuong Phi Lai, “Fisheries co-management in Vietnam: issues and approach,” IIFET 2008 Vietnam Conference, Nha Trang, Vietnam, July 2008.

⁶⁷ ADM Capital Foundation, “Vietnam Government Empowers Fishermen in Landmark Passage of Amended Fisheries Law, 14 December 2017, <http://admcf.org/2017/12/14/vietnam-vietnam-government-empowers-fishermen-landmark-passage-amended-fisheries-law/>

⁶⁸ Vietnam Association of Seafood Exporters and Producers, Fisheries Law (Amended): Vietnam’s Commitments on IUU have been Incorporated into the Law, 7 December 2017, http://seafood.vasep.com.vn/whybuy/749_12346/fisheries-law-amended-vietnams-commitments-on-iuu-have-been-incorporated-into-the-law.htm

Conclusion

The proposed joint development of resources and assets in the disputed areas of the SCS should not just be about geopolitics, ownership/sovereignty issues, political viability, or legal and constitutional issues. While these issues need to be addressed before joint development can take place, one critical subject that needs to be examined is how non-state stakeholders can contribute to sustainable sharing of resources in disputed resource-rich waters. This NTS Insight offers a preliminary examination of various roles of oil companies, fishermen and coastal communities in sharing the resources—oil, gas, and fisheries—of the SCS.

As demonstrated by this NTS Insight, it is critical that resource sharing and co-management must be driven by stakeholders themselves who can commit personal investment, ownership, and buy-in to the process, resulting in more effective behavioural change and compliance. But one important requirement is that stakeholders in the region must be able to demonstrate a strong commitment to collaboration and proactive governance. Unilateral attempts by claimant states to exploit the resources have only resulted in maritime stand-off incidents in the region in recent years, while marine environmental degradation in the SCS has been largely ignored. Cooperation among non-state stakeholders from claimant states can help facilitate a better framework for joint development and sharing of resources that can improve diplomatic relations among claimant states. Stakeholder participation can also lead to institutionalising better management system and fair sharing of resources. Furthermore, the intertwined issues of declining fish stocks, destruction of the marine ecosystems, and potential environmental impact of oil exploitation can be comprehensively addressed through practical stakeholder cooperation and proactive participation. The complex and dynamic interplay of environmental problems, rising demand for natural resources, and competing sovereignty claims in the SCS entails flexible and transparent governance mechanism and collaboration that embraces a diversity of expertise, interests, and best practices, among others. For this reason, stakeholder cooperation and participation must be increasingly sought and integrated in negotiations among SCS claimant states on sharing and joint development of natural resources.

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