

# A Bilateral Network of Marine Protected Areas between Vietnam and China: An Alternative to the Chinese Unilateral Fishing Ban in the South China Sea?

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Since 1999, China has enacted an annual fishing ban for two or three months in the summer in the North-Western part of the South China Sea. This year (2011), the ban took place from May 16<sup>th</sup> to August the 1<sup>st</sup> and in an area between the latitude 12° North to the North and longitude 113° East to the West.<sup>2</sup> Any fishing vessel that goes into this area during the ban is subjected to fines and its catches and gear confiscated.<sup>3</sup> According to Chinese news and scholars, this fishing ban is necessary to protect the sustainability of marine life in this area and prevent overfishing<sup>4</sup> and has produced positive results<sup>5</sup>. However, critics, including from China, question the effectiveness of this measure. Many commercially important fishes are not breeding at the time of the fishing ban. Furthermore, after a long pause due to the ban, fishing activities would increase manifold, which causes more risk of depletion of the stocks.<sup>6</sup>

A more serious problem is that this regulation is enforced against Vietnamese fishermen who fish in areas also claimed by Vietnam. In response to this fishing ban, relevant Vietnamese administrations, such as the Ministry of Foreign Affairs and the Vietnam Fisheries Society,

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<sup>2</sup> Nguyen Dang Thang, "Fishing Ban in the South China Sea: In quest for an alternative solution" [translated from Vietnamese: Lệnh cấm đánh cá ở Biển Đông: Đòi tìm một giải pháp khác] 2011 8:280 *State and Law Review* [translated from Vietnamese: Tạp chí Nhà nước và Pháp luật 76.

<sup>3</sup> "South China fishing ban" (May 17<sup>th</sup> 2011) CNC World, online: CNC World <[http://www.cncworld.tv/news/v\\_show/15019\\_South\\_China\\_fishing\\_ban.shtml](http://www.cncworld.tv/news/v_show/15019_South_China_fishing_ban.shtml)>, accessed July 26<sup>th</sup> 2011.

<sup>4</sup> Sun Wei, "South China Sea Fishing Ban Indisputable" (16 June 2009) *The Global Times*, online: The Global Times <<http://china.globaltimes.cn/editor-picks/2011-04/435503.html>>, accessed July 26<sup>th</sup> 2011.

<sup>5</sup> Zhen Sun, "South China Sea: Reducing the China-Vietnam tension" (August 8<sup>th</sup> 2011) RSIS Commentaries No.117/2011.

<sup>6</sup> Nguyen Dang Thang, see *supra* note 2 and Guifang Xue, *China and International Fisheries Law and Policy* (Leiden: Martinus Nijhoff Publisher, 2005) 114.

have raised their protests.<sup>7</sup> In particular, the Spokesperson of the Vietnam's Ministry of Foreign Affairs said "China's unilateral implementation of such fishing ban in the East Sea<sup>8</sup> is a violation of the Vietnamese sovereignty over Hoang Sa (Paracel) archipelago, sovereign rights and jurisdiction for Vietnam's exclusive economic zone and continental shelf, violating the Declaration on the Conduct of Parties in the South China Sea (DOC), further complicating the situation in the East Sea".<sup>9</sup> This ban was equally challenged by Vietnamese fishermen, who have been continuing their fishing activities offshore during this period.<sup>10</sup> This resulted in their arrest, detention, beating and seizure of catch and confiscation of fishing equipment by Chinese marine enforcement authorities.<sup>11</sup>

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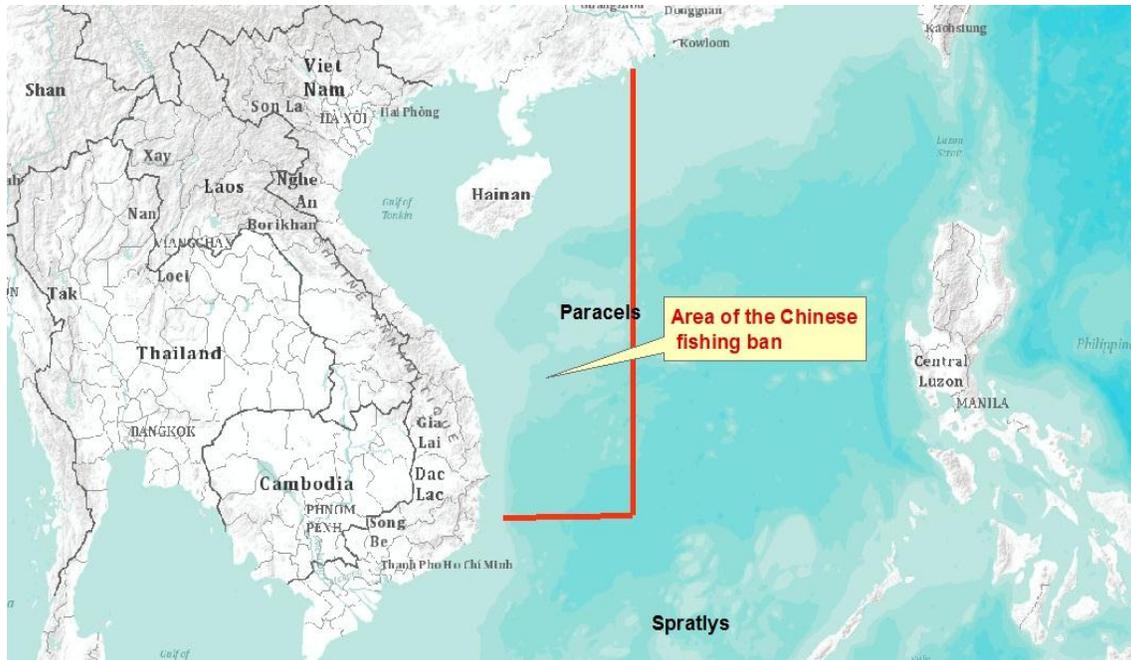
<sup>7</sup> "Vietnam opposes China East Sea fishing ban" (May 14<sup>th</sup> 2011) *VietnamNews*, online: VietnamNews <<http://vietnamnews.vn/agency.com.vn/Politics-Laws/211289/VN-opposes-Chinas-East-Sea-fishing-ban-.html>>, accessed July 26<sup>th</sup> 2011; "Vietnam's fishery society opposes China's fishing ban" (May 17<sup>th</sup> 2011) *ThanhNien News*, online: ThanhNien News <<http://en.baomoi.com/Home/society/thanhniennews.com/Vietnams-fishery-society-opposes-Chinas-fishing-ban/145055.epi>>, accessed July 26<sup>th</sup> 2011.

<sup>8</sup> The Vietnamese name for the South China Sea.

<sup>9</sup> "Chinese unilateral fishing ban in the East Sea is a violation of Vietnamese sovereignty" (May 14<sup>th</sup> 2011) Ministry of Foreign Affairs of Vietnam Spokesperson's Statement, online: Ministry of Foreign Affairs of Vietnam <[http://www.mofa.gov.vn/en/tt\\_baochi/pbnfn#xnxgHzi2gpGG](http://www.mofa.gov.vn/en/tt_baochi/pbnfn#xnxgHzi2gpGG)>, accessed July 26<sup>th</sup> 2011.

<sup>10</sup> "Vietnam defiant on first day of Chinese fishing ban" (May 16 2011) *M&C News*, online: M&C <<http://www.monstersandcritics.com/news/>>, accessed July 26<sup>th</sup> 2011; see also "Fishermen from central region keep going to the sea" [translated from Vietnamese: Ngư dân miền Trung tiếp tục bám biển] (May 30<sup>th</sup> 2011) *VTC News*, online: VTC News <<http://vtc.vn/2-286819/xa-hoi/mac-trung-quoc-cam-ngu-dan-mien-trung-van-bam-bien.htm>>, accessed July 26<sup>th</sup> 2011.

<sup>11</sup> "Chinese sailors beat up Vietnam ship captains" (July 16<sup>th</sup> 2011) *Manila Times*, online: Manila Times <<http://www.manilatimes.net/index.php/news/top-stories/1931-chinese-sailors-beat-up-vietnam-ship-captain>>, accessed July 26<sup>th</sup> 2011; "China releases 25 Vietnamese fishermen; 12 held" (June 26<sup>th</sup> 2009) *The Jakarta Post*, online: The Jakarta Post <<http://www.thejakartapost.com/news/2009/06/26/china-releases-25-vietnamese-fishermen-12-held.html>>, accessed July 26<sup>th</sup> 2011.



**Figure 1. Territorial Scope of the Chinese Fishing Ban in 2011**

created by author using ArcGIS software, 2011<sup>12</sup>

In practice, the issue of conservation and management of marine living resources in a disputed area can be resolved by the conclusion of a fishery agreement between relevant coastal countries. Examples of such agreements include the Convention between Canada and the United States in 1953 (modified by the Protocol of 1979)<sup>13</sup>, the Agreement between Sweden and the former-Soviet Union in 1977<sup>14</sup> and the Agreement between Japan and Russia in 1998<sup>15</sup>. This is

<sup>12</sup> All maps used in this paper are for the purpose of illustration only.

<sup>13</sup> See *Convention between Canada and the United Nations for Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea*, Canada and the United States, March 2<sup>nd</sup> 1953, 222 U.N.T.S. 77, modified by *Protocol amending the Convention between Canada and the United States of America for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea*, Canada and the United States, March 29<sup>th</sup> 1979, Can TS 1980 No.44.

<sup>14</sup> See *Agreement on Mutual Relations in the Field of Fisheries (with Protocol)*, Sweden and the Union of Soviet Socialist Republic, December 22<sup>nd</sup> 1977, 1260 U.N.T.S. 220.

<sup>15</sup> See *Agreement between the Government of Japan and the Government of the Russian Federation on some matters of cooperation in the field of fishing operations for marine living resources (provisional translation)*, February 21<sup>st</sup> 1998, online: Ministry of Foreign Affairs of Japan <<http://www.mofa.go.jp/region/europe/russia/territory/edition01/agreement.html>>, accessed July 28<sup>th</sup> 2011; for a more comprehensive analysis about the practice of concluding fishery agreements in disputed areas see Thang Nguyen-Dang, "Fisheries Cooperation in the South China Sea and the (ir)relevance of the sovereignty question" (2012) 2:1 Asian Journal of International Law 1, a draft of the paper can be found at Social Science Research Network, online: SSRN <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1871314](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1871314)>, accessed September 22<sup>nd</sup>

also a requirement of articles 74 (3) and 83(3) of the United Nations Convention on the Law of the Sea which ask states, pending a delimitation agreement relating to the exclusive economic zone and continental shelf, to “make every effort to enter into provisional arrangement of a practical a practical nature and, during this transitional period, not to jeopardize or hamper the reaching of the final agreement”.<sup>16</sup>

However, it is very difficult to have a fishery agreement that covers all the areas where there are overlapping claims between Vietnam and China in the North-Western area of the South China Sea as the disputed status of some portions of this area is already an object of disagreement. For instance, China considers that “there is nothing to negotiate” about the Paracel islands<sup>17</sup> and Vietnam has stated that the waters belonging to its exclusive economic zone and continental shelf, at least in the North-Western area of the South China Sea, are not disputed areas<sup>18</sup>.

This paper advocates for the establishment of a bilateral network of marine protected areas (MPA) between China and Vietnam in the North-Western part of the South China Sea as a potential solution to this dilemma. The author argues that, for the sake of the preservation of marine living resources in the North-Western part of the South China Sea and the maintenance of good relationship between the two countries, instead of taking unilateral measures, China and Vietnam can work together towards establishing a bilateral MPAs network. Certainly a bilateral network of MPAs between Vietnam and China is just a solution to this dilemma but as it is argued later in the paper, taking into consideration of the existing circumstance, it could be a very effective one.

The paper starts by giving some background information relating to protected areas, MPAs and MPAs network to point out what are the ecological, legal and political advantages of a

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2011 and Sun Pyo Kim, *Maritime Delimitation and Interim Arrangements in North East Asia* (Leiden: MartinusNijhoff Publishers, 2004) 177.

<sup>16</sup> *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 U.N.T.S. 3, arts 74(3) & 84(3).

<sup>17</sup> Greg Torrode & Minnie Chan, “China stands firm on Paracels in negotiations with Vietnam” (December 12<sup>th</sup> 2010) *South China Morning Post*, for details about the Paracels dispute between China and Vietnam see Stein Tønnesson, “The Paracels: The ‘Other’ South China Sea Dispute” (2002) 26:4 *Asian Perspectives* 145; Monique Chemillier-Gendreau, *Sovereignty over the Paracels and Spratly Islands* (The Hague: Kluwer Law International, 2000).

<sup>18</sup> Ministry of Foreign Affairs of Vietnam, “Press Conference on Chinese maritime surveillance vessel's cutting exploration cable of PetroViet Nam Seismic Vessel” (June 9<sup>th</sup> 2011), online: Ministry of Foreign Affairs of Vietnam <[http://www.mofa.gov.vn/en/tt\\_baochi/pbnfn/ns110610100618#T4dVoWFIwqCg](http://www.mofa.gov.vn/en/tt_baochi/pbnfn/ns110610100618#T4dVoWFIwqCg)>, accessed August 2<sup>nd</sup> 2011.

bilateral network of MPAs, over a unilateral fishing ban. It explains then how MPAs network as a tool for marine conservation is supported by international and regional instruments in which both Vietnam and China are participants. After that, the process of establishing a regional network of MPAs is reviewed with the Sulu-Sulawesi Marine Ecoregion as a case study. At the end, the paper provides perspectives on how such a bilateral network of MPAs between Vietnam and China could be implemented, especially considering the existing dispute between two countries in the North-Western South China Sea.

## 1. Background Relating to MPAs Network

This section explains the background relating to the concept of MPAs network and gives an account on how a bilateral or regional network of MPAs can be established. For instance, it reviews the definitions of relevant concepts such as protected area or MPA, transboundary MPAs and network of MPAs; their different functions and points out different advantages of a bilateral MPAs network compared to a unilateral fishing ban in a common sea. It states equally the criteria, necessary steps and essential factors for the successful establishment and management of a MPAs network, in particular at the regional level.

### *Definitions*

This sub-section defines relevant concepts used in this paper, such as MPAs, network of MPAs and transboundary protected areas:

The most well-known definition of MPAs is proposed by the International Union of the Conservation of the Nature. It defines a protected area in general as “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”.<sup>19</sup> This definition is also applicable to MPAs.<sup>20</sup> Under this definition, fishery management areas such as fishery closures or fishery protection zone can only be qualified as MPA if their primary purpose is biodiversity conservation and not fishery management.<sup>21</sup> This position is

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<sup>19</sup>N. Dudley, *Guidelines for Applying Protected Area Management Categories* (Gland: IUCN, 2008) 8.

<sup>20</sup> It is noted that before 2008, IUCN had distinct definitions for protected areas and marine protected areas.

<sup>21</sup>N. Dudley, see *supra* note 19 at 56; Sue Wells & Jon Day, “Application of the IUCN Protected Area Management Categories in the Marine Environment” (2004) 14:3 *Parks: Protected Area Categories* 28 at 34.

criticisable as sustainable fisheries also contribute to the protection of the marine resources, in particular of commercially important species. Besides, there is not much difference between a no-take MPA in which fishery is banned and a fishery reserves or fish sanctuary<sup>22</sup>. Under the framework of this paper, a fishery reserve established for sustainable fishery is considered as a MPA.

A network or system of MPAs is defined as “a collection of individual marine protected areas operating cooperatively and synergistically, at various spatial scales, and with a range of protection levels, in order to fulfil ecological aims more effectively and comprehensively than individual sites could alone”.<sup>23</sup> Not just any collection of MPAs can constitute a network but they must be located in critical habitats, containing components of a particular habitat type or portions of different kinds of important habitats and interconnected by the movement of species.<sup>24</sup>

A transboundary protected areas is “an area of land and/or sea that straddles one or more boundaries<sup>25</sup> between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond limits national sovereignty or jurisdiction, whose constituent parts are, especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, managed co-operatively through legal or other effective means”.<sup>26</sup> When a transboundary protected area is used not only for the purpose of protecting the environment but also the promotion of peace, it is called a park for peace or peace park.<sup>27</sup>

It should be noted that there seems to be confusion between network of protected areas, transboundary network of protected areas and transboundary protected area. For instance,

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<sup>22</sup> From a terminological point of view, many names with different original meaning such as parks, reserves, sanctuaries, closed areas or refugia have been used to refer to those areas with some spatially explicit restrictions. However, “protected area” has emerged as the most commonly used term implying protection of species and communities, see Gary W. Allison, Jane Lubchenko & Mark H. Carr, “Marine Reserves Are Necessary But Not Sufficient for Marine Conservation” (1998) 8(1) *Ecological Conservation* S79 at S80.

<sup>23</sup> IUCN, *Establishing Resilient Marine Protected Area Networks - Making it Happen* (Washington, DC: IUCN-WCPA, 2008) 12.

<sup>24</sup> *Ibid.*

<sup>25</sup> The term “boundaries” used in the definition seems to include also “frontier” and “border”. For the distinction between “boundary”, “frontier” and “border” see *infra* note 28.

<sup>26</sup> Trevor Sandwith, *Transboundary Protected Areas for Peace and Co-Operation, Based on the Proceedings of Workshops Held in Bormio (1998) and Gland (2000)* (Gland: IUCN, 2001) 3.

<sup>27</sup> *Ibid.* note 26

sometimes a transboundary protected area can be used to designate a network or a group of protected areas that is established in the border region and straddles across the boundary or frontier<sup>28</sup>. Besides, a transboundary network of protected areas can be used to designate a large network of protected areas which cover more than one country (which is not only limited to their boundary or frontier). To avoid confusion, this paper uses the term of “transboundary network of MPAs” to refer to a network of protected areas that is established in the border region and straddles both sides of the boundary or frontier, while a regional or bilateral network of protected areas refers to a network which cover the territories of more than one country but not limited to the border region.

### ***Functions of MPAs and MPAs Network***

This sub-section explains the functions of MPAs and the rationale for MPAs networking:

MPAs are considered to have generally two major functions. The first one is to provide for the protection of the marine ecosystem by preserving critical habitats and the water quality, safeguarding life-support processes of the sea and preserving sites from human impacts to help them recover from stresses.<sup>29</sup> The second function is to help maintain viable fisheries and rebuild damaged fish stocks.<sup>30</sup> Experiments have shown that species within MPAs have much higher densities, biomass, larger individual mean sizes and greater taxonomic diversity than outside ones. The fisheries in areas outside the MPAs can also benefit from those species moving from the marine protected areas by spill-over effect; however this conceptual assumption is not yet well understood by researchers.<sup>31</sup> Besides, MPAs can play many other important roles such as

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<sup>28</sup> It should be noted that while both boundary and frontier mean an area separating the territories of two countries, a boundary refers to a line meanwhile frontier is used to designate a zone without a delimitation line and border designates the outermost parts of a country, bounded in one side by the national boundary. For the meaning of different terminology such as “boundary”, “border” and “frontier” see Nguyen-Dang Thang, *supra* note 14; Victor Prescott & Gilian D. Triggs, *International Frontiers and Boundaries: Law, Politics and Geography* (Leiden: Martinus Nijhoff Publishers, 2008), 11 – 12; Douglas M. Johnston, *The Theory and History of Ocean Boundary-Making* (Kingston: McGill-Queen’s University Press, 1988) 3 and A.O. Cukwurah, *The Settlement of Boundary Disputes in International Law* (Manchester: Manchester University Press, 1967), 11 – 12.

<sup>29</sup> IUCN, see *supra* note 23 at 3; R. Rioja-Nieto and C. Sheppard, “Effects of Management Strategies on the Landscape Ecology of a Marine Protected Area” (2008) 51:5 *Ocean and Coastal Management* 397; Graeme Kelleher & Adrian Phillips (eds), *Guidelines for Marine Protected Areas, Best Practices Protected Area Guidelines Series No. 3* (Gland: IUCN, 1999) xvi.

<sup>30</sup> IUCN, see *supra* note 23 at 3.

<sup>31</sup> FAO/Japanese Government Cooperative Programme, *Report and Documentation of the Expert Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations, Rome, 12-14 June 2006* (Rome: Food and Agriculture Organization of the United Nations, 2007) 109; National Research Council,

contributing to, and enhancing tourism and recreation, serving as reference sites in education and scientific research and protect important cultural, historical, spiritual and aesthetic values.<sup>32</sup> Marine peace parks can be developed as a mechanism to help solve border disputes, secure or maintain peace during and after an armed conflict and promote a stable and cooperative relationship between neighbouring countries.<sup>33</sup>

Networks of protected areas can have many benefits. They can help ensure the protection of all types of biodiversity, maintain the natural range of species, protect unique, endemic, rare and endangered species spread over a fragmented habitat and protect ecological processes essential for ecosystem functioning and large-scale processes. From a management point of view, networks help ensure social and economic connections between protected areas, bringing sectoral agencies and different stakeholders together, facilitating information sharing and allowing more efficient resources use. They also provide greater flexibility to situate and configure protected areas in ways that maximise positive and avoid negative socioeconomic effects. At the regional level, networks can help protect an ecosystem along with species that cannot be adequately protected in one country and promote cooperation between neighbouring countries to address common issues.<sup>34</sup>

The practice of networking of MPAs is even more critical because of the characteristics of the marine ecosystem. Compared to the terrestrial environment, the sea is relatively open with more organisms dispersing and migrating at various life stages. Changes in marine ecosystems also occur in a shorter scale of time as they are subject to the surrounding medium and respond to forces such as tides or circulation patterns. Marine ecosystems and species are more closely

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Committee on the Evaluation, Design, and Monitoring Marine Reserves and Protected Areas in the United States, *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems* (Washington, D.C.: National Academy Press, 2001) 71.

<sup>32</sup>C.Toropova et al.(eds), *Global Ocean Protection: Present Status and Future Possibilities* (Gland: IUCN, 2010) 17.

<sup>33</sup>S.Stolton & N. Dudley, *Arguments for Protected Areas: Multiple Benefits for Conservation and Use* (Sterling, VA: Earthscan 2010) 228.

<sup>34</sup>UNEP-WCMC, *National and Regional Networks of Marine Protected Areas: A Review of Progress* (Cambridge: UNEP-WCMC, 2008) 24; Canada Department of Fisheries and Ocean, *National Framework for Canada's Network of Marine Protected Areas*, Draft November 2010, online: Canada Department of Fisheries and Ocean <<http://www.isdm-gdsi.gc.ca/oceans/publications/dmpaf-eczpm/framework-cadre-eng.asp>> accessed December 21<sup>st</sup> 2010.

connected in a number of ways such as wave, wind, freshwater inflow or tidal currents. Boundaries in the marine environment are very nebulous both in terms of outer bounds of ecosystems and definable limits of ecological communities and population structure.<sup>35</sup> Furthermore, marine mobile species such as fish, marine mammals and turtles can move in three dimensions and much greater distances than common terrestrial species.<sup>36</sup> Last but not least, marine ecosystems are relatively poorly understood by humans (who are terrestrial by nature) with much shorter history of studying the ocean and more costly expenses for research.<sup>37</sup>

### ***Advantages of a Bilateral Network of MPAs over a Unilateral Fishing Ban***

A unilateral fishing ban in an area claimed by more than one country might have a positive result, which is to contribute to the protection of fish resources but its biggest flaw, among others, is to create high tension with the other claimant. Besides, because its legality is protested, people might feel encouraged to ignore the measure, which will jeopardize its wanted effectiveness. Compared to a unilateral fishing ban, a bilateral network of MPAs presents some obvious advantages in all legal, ecological, socio-economic and political perspectives.

From a legal perspective, the establishment of a bilateral network of MPAs is totally in compliance with international law, which asks states to cooperate to protect the common marine environment and transboundary living resources:

- The United Nations Convention on the Law of the Sea asks states bordering a same marine unit or those which share stocks or stocks of associated species to *cooperate* for the protection of the marine environment and of these stocks [emphasis added]. For instance, article 123 asks states bordering an enclosed or semi-enclosed sea to endeavour to coordinate, whether directly or through appropriate regional organization in the exploitation, management and conservation of marine living resources and protection and preservation of the marine environment.<sup>38</sup> Article 63 asks relevant coastal states to cooperate in the conservation and development of stocks occurring within their exclusive

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<sup>35</sup>Tundi Spring Agardy, *Marine Protected Areas and Ocean Conservation* (Austin, TX: R.G. Landes, 1997)15.

<sup>36</sup>National Research Council, Committee on the Evaluation, Design, and Monitoring Marine Reserves and Protected Areas in the United States, see *supra* note 31 at 17.

<sup>37</sup>Tundi Spring Agardy, see *supra* note35at 15.

<sup>38</sup>*United Nations Convention on the Law of the Sea*, see *supra* note 16, art.123.

economic zones and in an area beyond and adjacent to it.<sup>39</sup> Article 66 relating to the conservation, exploitation and management of anadromous stocks asks States of origin these stocks and other states fishing them to “make arrangements” for its implementation.<sup>40</sup>

- Another international treaty, the Convention on Migratory Species and Wild Animals,<sup>41</sup> also provides for the cooperation within relevant states for the protection of migratory species. Signed in 1979, the Convention’s objective was to protect migratory species, their habitat and migration routes.<sup>42</sup> For species that need or would significantly benefit from international cooperation for their conservation and management,<sup>43</sup> it asks range states<sup>44</sup> to “take action to conclude agreements for any population or any geographically separate part of the population of any species or lower taxon of wild animals, members of which periodically cross one or more national jurisdictional boundaries”<sup>45</sup>.
- Besides, the cooperation between states to conserve common marine living resources is also supported by soft law instruments relating to responsible fisheries such as the Code of Conduct for Responsible Fisheries of the Food and Agriculture Organization of the United Nations.<sup>46</sup> The Code was adopted at the 28<sup>th</sup> FAO Conference<sup>47</sup> on 31 October 1995 for the purpose of providing principles and standards for responsible fisheries practices to ensure the effective development and management of living aquatic

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<sup>39</sup>*Ibid.*,art. 63

<sup>40</sup>*Ibid.*,art. 66.

<sup>41</sup>*Convention on the Conservation of the Migratory Species and Wild Animals*, June 23<sup>rd</sup>1979, 1651 U.N.T.S 333.

<sup>42</sup>Convention on Migratory Species, *Introduction to the Convention on Migratory Species*, online: Convention on Migratory Species <<http://www.cms.int/about/intro.htm>>, accessed the 02 August 2010.

<sup>43</sup>Included in the Annex II of the Convention.

<sup>44</sup> Article I.f) of the Convention defines "range" as all the areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route.

<sup>45</sup>*Convention on the Conservation of the Migratory Species and Wild Animals*, see *supra* note 41, Art.IV.3 & 4.

<sup>46</sup>*Code of Conduct for Responsible Fisheries*, 28<sup>th</sup>FAO Conference, 31 October 1995, Introduction,(Rome: FAO, 1995) online: FAO <[www.fao.com](http://www.fao.com)>, accessed the 13 February 2010.

<sup>47</sup> The supreme governing body of FAO which has the function to determine policies of the Organization, approve its Programme of Work and Budget and make recommendations to Members and international organizations. See: “Constitution”, art. IV, in FAO, *Basic Texts of the Food and Agriculture Organization of the United Nations*, Vol I & II (Rome: FAO, 2010) at 1.

resources.<sup>48</sup> Article 7.1.3 of the Code asks relevant states to cooperate to ensure effective cooperation of transboundary, straddling, highly migratory and high sea fish stocks.<sup>49</sup>

From an ecological point of view, MPA and MPAs networks are more comprehensive tools for conservation than fishing bans. An MPA, by definition, can be used not only for the maintenance and rebuilding of fish stocks but also the protection of fragile, rare and critical habitats of the marine environment such as coral reef and seagrass beds (which are also important fish habitats) or the protection of other endangered species. Furthermore, it does not only provide for the protection of the marine environment against fishing activities but also other exploitation of the sea such as shipping or oil and gas exploitation.

From a socio-economic point of view, an MPA is not necessarily a no-take area where all fishing activities are banned. In many MPAs worldwide, some exploitation, in particular traditional fisheries, is still allowed. From this perspective, fishermen livelihoods will be less affected than a complete fishing ban.

From a political perspective, as a network of MPAs is flexible in terms of areas chosen to be protected, issues of sovereignty can be avoided by designating, at least at the beginning of the process, MPAs that are located in non-disputed waters.

## **2. The support of MPAs Network in international and regional texts**

The establishment of MPAs networks, in particular at the regional level, has been supported by a number of international and regional instruments relevant to the protection of the marine environment, to which both China and Vietnam are parties. This sub-section gives an overview of those international and regional texts, which could provide the legal and political framework for cooperation towards the establishment of a bilateral network of MPAs between two countries.

### ***The support of MPAs Network in international texts***

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<sup>48</sup>*Code of Conduct for Responsible Fisheries*, 28<sup>th</sup>FAO Conference, 31 October 1995, Introduction,(Rome: FAO, 1995) online: FAO <[www.fao.com](http://www.fao.com)>, accessed the 13 February 2010.

<sup>49</sup>*Ibid.*,art.7.1.3.

Provisions relating to MPAs and MPAs network can be found under the framework of Convention of Biological Diversity, the World Summit on Sustainable Development and United Nations General Assembly resolutions:

- The Convention on Biological Diversity<sup>50</sup> was signed at the United Nations Conference on Environment and Development in Rio De Janeiro in 1992 to ensure the conservation of biodiversity, sustainable use of its components and fair and equitable sharing of benefits arising out of the utilization of genetic resources.<sup>51</sup> Article 8 of the Convention asks states to implement a series of tasks to ensure *in-situ* conservation.<sup>52</sup> Those tasks include, *inter alia*, establishing a system of protected areas; developing guidelines for the selection, establishment and management of protected areas; regulating or managing biological resources important for the conservation of biological diversity whether within or outside protected areas; and promoting environmentally sound and sustainable development in areas adjacent to protected areas.

The Conference of the Parties of the Convention on Biological Diversity, the governing body of the Convention, has also adopted many decisions relating to MPAs network. The most important one established a programme of work on protected areas, in 2004.<sup>53</sup> The objective of this programme was “the establishment and maintenance by 2010 for terrestrial and by 2012 for marine areas of comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas”.<sup>54</sup> It also stated that, the establishment and management of protected areas should be considered in ecosystem and bioregional terms when the relevant ecosystem extends beyond national boundaries.<sup>55</sup> In 2010, the programme was reviewed with a new objective of establishing

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<sup>50</sup>Convention on Biological Diversity, June 5<sup>th</sup>1992, 760 U.N.T.S. 79.

<sup>51</sup>*Ibid.*,art.1.

<sup>52</sup>*Ibid.*,art. 8.

<sup>53</sup>Convention on Biological Diversity,*Protected areas (Articles 8 (a) to (e))*, Annex, Decision VII/28, 7<sup>th</sup>Meeting of the Conference of the Parties to the Convention on Biological Diversity, Kuala Lumpur, Malaysia, 9-20 February 2004

<sup>54</sup>*Ibid.*, para.6.

<sup>55</sup>*Ibid.*, para.8.

networks of MPAs that cover at least 10 percent of the coastal and marine areas of the world by 2020.<sup>56</sup>

- At the World Summit on Sustainable Development in Johannesburg, South Africa in 2002, a Plan of Implementation of the World Summit on Sustainable Development<sup>57</sup> was adopted. It comprises the commitments to undertake concrete actions and measures to achieve the overarching objectives and essential requirements of sustainable development. Relating to the protection of the marine environment, the Plan requires effective coordination, cooperation and actions at all level to, *inter alia*, the establishment of MPAs consistent with international law and based on scientific information, including representative networks by 2012.
- The support for the establishment of MPAs networks is also expressed by the United Nations General Assembly in its resolutions relating to ocean and the law of the sea. For instance, in the Ocean and Law of the Sea resolution in 2010, the General Assembly affirmed the need for states to continue and intensify their efforts to develop and facilitate the use of diverse approaches and tools for conserving and managing vulnerable marine ecosystems, including the possible establishment of MPAs and the development of representative MPAs networks by 2012.<sup>58</sup>

### ***The Support of MPAs Network in Regional Texts***

The establishment of a network of MPAs is equally provided in a number of regional instruments for the protection of the marine environment relevant to the South China Sea that both China and Vietnam have participated in. These texts include the Action Plan for the Protection and Sustainable Development of the Marine and Coastal Areas of the East Asian Region, 1994 and the Sustainable Development Strategy for the East Asian Seas, 2003.

The Action Plan for the Protection and Sustainable Development of the Marine and Coastal Areas of the East Asian Region is one of the 13 UNEP's Regional Seas Programmes, initiated in

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<sup>56</sup>Convention on Biological Diversity, *Protected Areas*, Decision X/31, 10<sup>th</sup> Meeting of the Conference of the Parties to the Convention on Biological Diversity, *Nagoya, Japan*, October 18 - 29 2010.

<sup>57</sup>“Plan of Implementation of the World Summit on Sustainable Development” in *Report of the World Summit on Sustainable Development*, Johannesburg, South Africa, 26 August- 4 September 2002, at 6, A/CONF.199/20 (New York: United Nations, 2002).

<sup>58</sup>*Ocean and Law of the Sea*, GA Res. 65/37, para.177, UNGA OR, 65<sup>th</sup>session, Agenda item 74 (a), UN Doc.A/RES/65/37 (2010).

1983 and reviewed in 1994.<sup>59</sup> Its members are Australia, Brunei, Cambodia, China, Indonesia, Malaysia, Philippines, Republic of Korea, Singapore, Thailand and Vietnam. The principal objective of the Action Plan is to provide a comprehensive strategy to protect the environment and to promote sustainable development in the East Asian Seas region.<sup>60</sup> Relating to MPAs network, the Action Plan states that a network of properly managed MPAs including strictly protected areas should be established. Critical habitats forming parts of the network are to be selected on the basis of their productivity, uniqueness and vulnerability. Such measures should have the twin goals of conserving biodiversity (to the degree possible) and maintaining useful levels of productivity with respect to human needs.<sup>61</sup>

The Sustainable Development Strategy of the Marine and Coastal Areas of the East Asian Region was adopted by the Putrajaya Declaration in 2003 by states participating in the Partnership in Environmental Management for the Seas of East Asia programme.<sup>62</sup> The Strategy contains a package of applicable principles, relevant existing regional and international programmes, agreements, instruments, objectives and implementation approaches for achieving sustainable development of the seas of East Asia.<sup>63</sup> One of the objectives stated by the Strategy was to have a common management system for MPAs of transboundary importance. The actions to achieve this objective are to select and prioritize coastal and marine protected areas of transboundary importance and to establish appropriate management regimes for marine protected areas and particularly sensitive sea areas of transboundary significance.<sup>64</sup>

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<sup>59</sup>UNEP Regional Seas, *Action plan for the Protection and Sustainable Development of the Marine and Coastal Areas of the East Asian region*, Annex IV, Doc. COBSEA (OCA)/EAS IG5/6, (1994).

<sup>60</sup> See UNEP Regional Seas, *Action plan for the Protection and Sustainable Development of the Marine and Coastal Areas of The East Asian region*, UNEP Regional Seas Reports and Studies No.24, (Bangkok: UNEP, 1983).

<sup>61</sup>*Ibid.*, para.24.

<sup>62</sup> Namely, Brunei, Cambodia, China, Democratic Republic of Korea, Indonesia, Japan, Malaysia, Philippines, Republic of Korea, Singapore, Thailand and Vietnam. For more information about the thePartnership in Environmental Management for the Seas of East Asia programme, see PEMSEA, online: PEMSEA <[www.peamsea.org](http://www.peamsea.org)>, accessed July 30<sup>th</sup> 2011.

<sup>63</sup>PEMSEA, *Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia*, East Asian Seas Congress 2003, Putrajaya, Malaysia, 12 December 2003, online: PEMSEA <[www.peamsea.org](http://www.peamsea.org)>, accessed April 9<sup>th</sup> 2010.

<sup>64</sup>*Ibid.* at 57.

### 3. The Process of Establishing a Marine Protected Areas Network

The establishment of a MPAs network is not a “one shot” exercise but a multi-step process of which the success depends on many factors. This section gives a detailed description of the process by explaining the basic criteria on which a network of MPAs should be established, the different steps that the process of establishing a MPAs network need to follow and essential factors for the success of the process.

#### *Criteria of Network of Marine Protected Areas*

To be able to fulfill its function, a network of MPAs needs to be established based on a number of criteria. Though called under various terminologies, the applicable criteria for a network of MPAs are most commonly designated as representativeness, resilience and connectivity. Most of them are ecological but some socio-economic ones also need to be taken into consideration. A summarized explanation of different criteria for the establishment of a MPA network follows:

- Size, shape and spatial distribution of individual marine protected areas in a network: individual components of a MPAs network have to be of an appropriate size, shape and spatial distribution.<sup>65</sup> MPAs networks should be self-sustaining or viable in the sense that they must be able to maintain the persistence of populations and ecosystems through natural cycles of variation. For the protection of species, the individual MPA should be large enough to capture the home-range sizes of many species, as well as allow for self-seeding by short-distance dispersers.<sup>66</sup>

Relating to the shape of the MPA, it is important to consider the ratio of edge habitat versus core interior habitat as the edges are often extensively fished and therefore do not offer the same refuge to fish species as core interior protected areas do. It is also important to include a variety of depths and transitional zones while planning for representation of all habitats types within a network. The shape of an MPA should aim to

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<sup>65</sup> UNEP-WCMC, see *supra* note 34 at 26.

<sup>66</sup> Robert M. Callum *et al.*, “Ecological Criteria for Evaluating Candidate Sites for Marine Reserves” (2003) 13:1 (Supplement) *Ecological Applications* S199

capture the onshore-offshore or habitat-habitat ontogenic shifts of species. Besides, the MPA should be designed to encompass, not bisect the protected ecological features.<sup>67</sup>

The spatial distribution between MPAs must be guided by movement of species, their larvae, eggs and spores into, out of and between MPAs which in turn depends on their dispersal distance. MPAs must be appropriately spaced to capture the broadest range of dispersal possible. Furthermore, the spacing of MPAs should also consider habitat patterns. Within the network, spacing to the next MPA should offer suitable habitat for target species or range of target species.<sup>68</sup>

- The permanence of the network: an MPAs network as a whole has to be considered permanent, even if units within it change. Protecting biodiversity, restoring and maintaining species requires long-term commitments. Long-term MPAs not only can have positive results on the biomass, abundance, size and diversity of species within the protected area but also benefit areas outside its boundary thanks to spill-over of juveniles and export of larvae and eggs. The time to accrue social, economic and environmental benefits can vary from few seasons to decades depending on various elements (such as life story of target species, conditions of the ecosystem or speed of development of the network).<sup>69</sup>
- The representativeness of the network: in general, species diversity increases with habitat diversity, therefore the greater the variety of habitats protected, the greater the biodiversity conservation.<sup>70</sup> For this reason, a network of MPAs should be fully ecological representative in the sense that one or more MPAs need to be established for each of full range of biological diversity (from genes to ecosystem) and the associated oceanographic environment in the given area.<sup>71</sup> The network should also aim to capture the differences in biodiversity across different depths as well as geographic areas. The

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<sup>67</sup>IUCN, see *supra* note 23 at 59; J. Smith *et al.*, *Criteria and Tools for designing ecologically sound marine protected areas networks in Canada's marine region* (Halifax, N.S: WWF Canada 2009) 13.

<sup>68</sup>IUCN, see *supra* note 23 at 59.

<sup>69</sup>UNEP-WCMC, see *supra* note 34 at 27; IUCN, see *supra* note 23 at 50.

<sup>70</sup>IUCN, see *supra* note 23 at 59.

<sup>71</sup>UNEP-WCMC, see *supra* note 34 at 27.

representativeness of a network is assessed using a biogeographical approach,<sup>72</sup> which studies all possible scales of analysis of the distribution of life across space, and how, through time, it has changed with a focus on distribution and dynamics of diversity.<sup>73</sup>

The total area set aside for the protection of each habitat should be approximately related to its relative prevalence in the region. It is estimated that, a network of fully protected areas should cover 20% or more of all biogeographic regions and habitats in order to meet all fishery and conservation goals.<sup>74</sup> The World Parks Congress has called for strictly protected MPAs covering 20 to 30% of each habitat for healthy and productive oceans by 2012.<sup>75</sup> The Conference of the Parties to the CBD, in its programme of work adopted at the 7<sup>th</sup> Meeting in 2004, called for the protection of at least 10% of the marine ecological regions in the world by 2012.<sup>76</sup>

- The resilience of the network: the ecological resilience of a network refers to its ability to survive natural disasters and major impacts, and to absorb shocks. Resilience is important to ensure the long-term function of a MPAs network regardless of natural and human changes.<sup>77</sup> To increase resilience, MPAs networks should include multiple samples of habitats types, separated spatially to spread the risks of large scale event destroying the

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<sup>72</sup>*Ibid.* note 71& at 21; IUCN, see *supra* note 29 at 40; Adrian G. Davey, *National System Planning for Protected Areas* (Gland: IUCN, 1998) 13; Airamé Satie *et al.*, “Applying Ecological Criteria to Marine Reserve Design: A Case Study from the California Channel Islands” (2003) 13(1) *Supplement Ecological Applications* S170 at S172; AHTEG/MCPA, *Technical Advice on the Establishment and Management of a National System of Marine and Coastal Protected Areas*, CBD Technical Series no.13, (Montreal: Secretariat of the Convention on Biological Diversity, 2004) 24; Robert M. Callumet *et al.*, “Application of Ecological Criteria in Selecting Marine Reserves and Developing Reserve Networks” (2003) 13(1) *Supplement Ecological Applications* S215 at S218; Jane Lubchenko *et al.*, *The Science of Marine Reserves* (2002) online: Partnership for Interdisciplinary Studies of Coastal Oceans <<http://www.piscoweb.org>>, accessed the 11/06/2010 at 17.

<sup>73</sup>Robert J. Whittaker *et al.*, “Conservation Biogeography: Assessment and Prospect” (2005) 11 *Diversity and Distributions* 3 at 4.

<sup>74</sup>IUCN, see *supra* note 23 at 42.

<sup>75</sup>*Recommendations*, Vth IUCN World Parks Congress, Durban, South Africa, from 8 to 17 September, 2003.

<sup>76</sup>Convention on Biological Diversity, *Strategic Plan: Future Evaluation of Progress*, Decision VII.30, Annex II, 7<sup>th</sup> Meeting of the Conference of the Parties to the Convention on Biological Diversity, Kuala Lumpur, Malaysia, 9-20 February 2004. It should be noted that at the 10<sup>th</sup> Meeting of the Conference of the Parties to the CBD in Aichi, Japan, this deadline has been delayed to 2020, see Convention on Biological Diversity, Decision X/2, 10<sup>th</sup> Meeting of the Conference of the Parties to the Convention on Biological Diversity, Nagoya, Japan, October 18 - 29 2010.

<sup>77</sup>UNEP-WCMC, see *supra* note 34 at 28.

only protected site of a certain habitat (practice of replicating). Replications of habitats within MPAs networks play an equally important role in providing step-stone for dispersal of marine species sites for studies on MPAs effectiveness.<sup>78</sup> The resilience of MPAs network can also be improved by ensuring that a number of MPAs within the network are free from extractive uses, preserving the genetic variability of the species and ecosystems involved in the MPAs network and paying attention to especially vulnerable species and habitats.<sup>79</sup>

- The connectivity of the network: Connectivity refers to linkages that exist as a result of particular characteristics of marine organisms (larval dispersal, pelagic juveniles and adults and reproduction through spawning) and of the marine environment (mixing of waters through wind, tides, currents and upwelling). These linkages exist spatially, both in localised situations and basin-wide and temporally in terms of genetic flow and generational time-scales. To ensure the protection of ecological functioning and system productivity, an MPAs network should maximise and enhance connectivity between individual MPAs, groups of MPAs within an area and MPAs networks in the same or different regions.<sup>80</sup>
- Cost-effectiveness, efficiency and equity of the network: Finally, the establishment of MPAs network must ensure a balance between cost and benefits, appropriate equity in their distribution and include the minimum number of protected areas to achieve the system objectives.<sup>81</sup>

### ***Steps for the Development of a MPA Network***

This section explains the most important steps of the process of developing a network of MPAs. According to different guidelines<sup>82</sup>, the process of development of an MPAs network can be divided into six steps: identification of an ecological unit for management, evaluation of the

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<sup>78</sup>IUCN, see *supra* note 23 at 42; AHTEG/MCPA, see *supra* note 72.

<sup>79</sup>UNEP-WCMC, see *supra* note 34 at 28.

<sup>80</sup>*Ibid.* at 29.

<sup>81</sup>Adrian G. Davey, see *supra* note 72 at 17.

<sup>82</sup>For example, IUCN see *supra* note 23; AHTEG/MCPA, see *supra* note 72 and C. R. Margules & R. L. Pressey, "Systematic Conservation Planning" (2000) 405 *Nature* 243.

current situation of the area, determination of goals and objectives, designation of new marine protected areas, implementation of the network and monitoring.

- Identification of the ecological unit for management: the first step is to determine which geographical scale to build a network of MPAs or in other terms, to define the boundaries of the network. MPAs networks can be established at different scales from a local network of few MPAs within a single large one to a national network within a country and regional network involving several ones.<sup>83</sup> In practice, the choice of a geographical scale would depend on geophysical, biogeographical, ecological, political, jurisdictional and socioeconomic characteristics of the area. For instance, different systems of division of world oceans into smaller units have been realized:
  - The system of 18 marine ecoregions based on bio-geographical criteria with consideration of political boundaries of the World Commission on Protected Areas.<sup>84</sup>
  - The system of 64 large marine ecosystems based on hydrographic, topographic and biological characteristics of United States National Oceanic and Atmospheric Administration.<sup>85</sup>
  - The “nested” system of 12 realms, 62 provinces and 232 ecoregions based on biogeographic characteristics of the WWF.<sup>86</sup>
- Evaluation of the current situation: in order to determine appropriate goals and objectives of a network of marine protected areas, it is necessary to assemble and evaluate all relevant information about the natural, political, regulatory, socioeconomic and cultural situation relating to the region to be protected. With regards to the ecological situation of the region, information about two subjects should be gathered: the current distribution

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<sup>83</sup>UNEP-WCMC, see *supra* note 34 at 21.

<sup>84</sup> Graeme Kelleher, Chris Bleakley & Sue Wells (eds), *A Global Representative System of Marine Protected Areas, Vol. 1: Antarctic, Arctic, Mediterranean, Northwest Atlantic, Northeast Atlantic, Baltic* (Washington: The World Bank, 1995) 2.

<sup>85</sup> Kenneth Sherman *et al.*, *Global Applications of the Large Marine Ecosystem Concept 2007 – 2010* (Woods Hole, MA.: US Department Of Commerce, 2007) 2.

<sup>86</sup> Mark D. Spalding *et al.*, “Marine Ecoregions of the World: A Bioregionalization of Coastal and Shelf Areas” (2007) 57 *BioScience* 573 at 576.

and status and trend of its biodiversity.<sup>87</sup> An evaluation of the current protection measures, in particular existing MPAs in the region should be conducted which will help figure out gaps of the current system.

- Determination of goals and objectives: Goals and objectives must be set for a network as a whole and each individual component within it.<sup>88</sup> Three broad categories of objectives should be considered: ecological, economic and socio-cultural. Ecological objectives are to protect, manage and restore marine ecosystems and their components, including processes, structure, function and integrity, as well as wildlife and geographic features.<sup>89</sup> Economic objectives include providing for the continued welfare of people affected by the creation of MPAs,<sup>90</sup> short- and long-term view of their cost and benefits and how to distribute them.<sup>91</sup> Socio-cultural objectives refer to the contribution of protected areas to the quality of life of the local community.
- Designation of new MPAs: Once all the gaps have been analysed and objectives identified; new MPAs should be designated pursuant to criteria relating to location, size and shape and socioeconomic criteria described above. A number of methodological approaches for MPAs selection have been developed, such as scoring methods and complementary methods.<sup>92</sup> The former consists of assigning scores to each site based on a set of criteria and ranking them in order of their priority according the received scores. The site with highest score will be added to the existing system and the process will stop

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<sup>87</sup>Nigel Dudley & Jeffrey Parish, *Closing the Gap: Creating Ecologically Representative Protected Area Systems. A Guide to Conducting the Gap Assessments of Protected Area Systems for the Convention on Biological Diversity*, Technical Series 24 (Montreal: Secretariat of the Convention on Biological Diversity, 2006) 29.

<sup>88</sup>UNEP-WCMC, see *supra* note 34 at 31.

<sup>89</sup>IUCN, see *supra* note 23 at 31.

<sup>90</sup>Graeme Kelleher & Richard Kenchington, *Guidelines for Establishing Marine Protected Areas* (Australia: Great Barrier Reef Marine Park Authority, 1991) 9.

<sup>91</sup>IUCN, see *supra* note 23 at 31.

<sup>92</sup>S. M. J. Evans *et al.*, *Evaluation of Site Selection Methodologies for Use in Marine Protected Area Network Design* (Ottawa: Fisheries and Ocean Canada, 2004) 8, online: Fisheries and Ocean Canada <<http://www.dfo-mpo.gc.ca>>, accessed the 28 June 2010.

when the size of the area deems desirable for protection and the cost of implementation has been reached. The complementary approach takes into account the extent to which a site or set of sites contributes to meeting the desired objectives of the overall framework. It tries to find the most efficient solution to the problem of designing a network of MPAs that meets a specified conservation goal while engendering the minimal cost.

- Implementation of the network: Implementing a network of MPAs include the deployment of management measures at the network and site-specific levels.<sup>93</sup>The purpose of management is to ensure that the objectives set for a particular MPA or for a MPAs network are met.To be effective, MPAs need to be established and managed in integration with other management frameworks such as marine spatial planning and integrated coastal zone management and in synergy with other marine environment conservation and management tools, such as traditional fisheries management measures or prevention of marine pollution from land-based sources.<sup>94</sup>

At the large scale, the establishment of multiple-use MPAs can be a useful solution. According to the National Marine Protected Areas Center of the United States “multiple-use areas allow for integrated management of complete marine ecosystems, usually through a zoning process”.<sup>95</sup>Multiple-use protected areas generally have two types of sub-areas: a core zone which is strictly controlled and another zone in which some extractive uses may be allowed.<sup>96</sup> This zoning practice can minimize the conflict between expanding coverage of conservation and urgent economic pressures.<sup>97</sup>

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<sup>93</sup> UNEP-WCMC, see *supra* note34 at32.

<sup>94</sup>BilianaCicin-Sain& Stefano Belfiore, "Linking Marine Protected Areas into Integrated Coastal and Ocean Management: A review of theory" (2005) 48: 11/12 Ocean and Coastal Management 847; C.Toropovaet *al.*(eds), see *supra* note 32 at 21.

<sup>95</sup> National Marine Protected Areas Center – US Department of Commerce, *Glossary*, online: National Marine Protected Areas Center <<http://www.mpa.gov/glossary.html>>, accessed January 16<sup>th</sup> 2011.

<sup>96</sup>Nigel Dudley *et al.*, *Towards Effective Protected Area Systems: An Action Guide to Implement the Convention on Biological Diversity Programme of Work on Protected Areas*, Technical Series No.18 (Montreal: Secretariat of the Convention on Biological Diversity, 2005) 32.

<sup>97</sup>James Sanderson, *Biodiversity Conservation Corridors: Planning, Implementing, and Monitoring Sustainable Landscapes* (Washington, D.C: Conservation International, 2003) 30.

- Monitoring: To evaluate the effectiveness of a network of marine protected areas, regular monitoring and periodic assessments should be conducted. They allow the manager to measure whether the goals and objectives set earlier have been achieved and to make any refinement in management if necessary. Two types of monitoring have been recommended for conservation and development projects: biodiversity monitoring and impact monitoring. The former measures changes in biological diversity and the latter involves assessment of human activities on species under management.<sup>98</sup> Besides, monitoring and assessment should be done at three levels: at the individual MPA level, biogeographic level and at the level of the network as a whole.<sup>99</sup> Finally, monitoring systems should be appropriate, cost-effective, achievable and involve a transparent and consultative process.<sup>100</sup>

### ***Essential Factors for the Success of a Network of MPAs***

For the successful establishment and functioning of a network of MPAs, certain factors are very important in supporting the process: the participation of all relevant stakeholders, a supportive legal and political framework, the use of the best available knowledge, an effective system of compliance and enforcement, sustainable financing and the formation of social MPAs networks.

- Involvement of all stakeholders: One of the most important conditions for the success in the establishment and maintenance of individual and network of MPAs is to involve all relevant stakeholders since the beginning of the process.<sup>101</sup> “Stakeholders” can be defined as any individual or group who may be involved in, affected by, or express a strong interest in, the management of a particular resource or area.<sup>102</sup> Stakeholder participation will help achieving the equitable sharing of benefits rising from the creation of MPAs,

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<sup>98</sup>*Ibid.* at 34.

<sup>99</sup>ANZECC Task Force on Marine Protected Areas, *Strategic Plan of Action for the National Representative System of Marine Protected Areas: A Guide for Action by Australian Governments* (Canberra: Environment Australia, 1999) 36.

<sup>100</sup> AHTEG/MCPA, see *supra* note 72 at 32.

<sup>101</sup> Graeme Kelleher & Adrian Phillips (eds), see *supra* note 29 at 20.

<sup>102</sup>ANZECC Task Force on Marine Protected Areas, see *supra* note 99 at 28.

allow decisions to be made in an inclusive and transparent way and facilitate the involvement in decision-making and management of a wide range of players, increasing the likelihood of success.<sup>103</sup> Besides, many communities have customary rights over the protected territory and resources (which might not be officially recognized).<sup>104</sup> Relevant stakeholders should be identified. Relevant to the process of establishment of a network of MPAs include people living within or close to the MPA, people whose livelihoods may be directly affected, people having a decision-making role (formally or informally), people representing a community interest and people whose activities will affect the success of the MPA<sup>105</sup>. The most common methods to involve stakeholders in the process of establishing of MPAs include workshops, public meetings, public hearings, formal consultation, individual interviews, surveys, questionnaires, demonstration or field trips.<sup>106</sup>

- A supportive legal and political framework: A strong and effective MPAs system is generally supported by appropriate legal instruments and policies.<sup>107</sup> The implementation of a MPAs network should be accompanied by a solid legal authority in form of clear rules. The relevant legal framework can be provided by statutory law or traditional

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<sup>103</sup> AHTEG/MCPA, see *supra* note 72 at 34.

<sup>104</sup> Grazia Borrini-Feyerabend, *Collaborative Management of Protected Areas: Tailoring the Approach to the Context*, Issue in Social Policy (Gland: IUCN, 1996) 6.

<sup>105</sup> AHTEG/MCPA, see *supra* note 72 at 34.

<sup>106</sup> For examples of methods to engage stakeholders in public policy, see AHTEG/MCPA, see *supra* note 72; Mary R. English *et al.*, *Stakeholder Involvement: Open Processes for Reaching Decisions about the Future Uses of Contaminated Sites* (Knoxville: Waste Management Research and Education Institute, University of Tennessee, 1993), online: Energy, Environment and Resources Center – University of Tennessee <<http://eerc.ra.utk.edu/publications/staff-reports/stake.pdf>>, accessed September 21<sup>st</sup> 2011 at 6; NOAA Coastal Service Center, *Introduction to Stakeholder Participation* (Charleston: NOAA Coastal Service Center, 2007), table 4 at 11; Cambridge Systematics, *ODOT Stakeholder Involvement Best Practice Report* (March 28<sup>th</sup> 2011), prepared for Oregon Department of Transportation, online: Department of Transportation – State of Oregon <[www.oregon.gov/ODOT/TD/TP/docs/publications/BestPractices.pdf](http://www.oregon.gov/ODOT/TD/TP/docs/publications/BestPractices.pdf)>, accessed September 21<sup>st</sup> 2011, Figure 1.1 at 1-2; Nuclear Energy Agency – Organization for Economic Development and Cooperation, *Stakeholder Involvement Techniques: Short Guide and Annotated Bibliography* (2004), NEA No.5418, online: Nuclear Energy Agency – Organization for Economic Development and Cooperation <[www.oecd-nea.org/rwm/reports/2004/nea5418-stakeholder.pdf](http://www.oecd-nea.org/rwm/reports/2004/nea5418-stakeholder.pdf)>, access September 21<sup>st</sup> 2011, box 2 at 30.

<sup>107</sup> AHTEG/MCPA, see *supra* note 72 at 51.

customary rules.<sup>108</sup> The content of the legislation should include details relating to individual MPA and network of MPAs such as authority to establish MPAs, the delineation of their boundaries, role and responsibility of participants, enforcement mechanisms, dealing with threats to protected areas and the protection of rights and legitimate interests of affected people.<sup>109</sup>

- The use of the best available knowledge: good information can lead to optimal design of MPAs networks as they improve the quality of decision-making and enhance the quality to predict consequences of action or inaction.<sup>110</sup> For this reason, from the beginning of the process of establishing a network of MPAs, the manager must gather all best available data and information for gap analysis, planning and decision-making. These data and information are based on current knowledge about biodiversity, environmental services, social issues and management strategies. In case of uncertainty and lack of information, MPAs networks still need to be established in pursuance with the precautionary approach which states that when there is a serious threat to the environment or human health, measures should be taken even there is a lack of full scientific certainty to prevent the degradation.<sup>111</sup> In any case, more research should be conducted to further the understanding how MPA can be managed in the most effective way. At the same time, MPAs also present great opportunities for the implementation of ecological experiments on specific spatial and temporal scales.<sup>112</sup>

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<sup>108</sup>IUCN, see *supra* note 23 at 32.

<sup>109</sup>Graeme Kelleher & Richard Kenchington, see *supra* note 90 at 20; Nigel Dudley *et al.*, see *supra* note 96 at 51; Gillespie, *Protected Areas and International Environmental Law* (Boston: MartinusNijhoff Publishers, c2007) 183; AHTEG/MCPA, see *supra* note 72 at 34; Mary Gleason *et al.*, "Science-based and Stakeholder-driven Marine Protected Area Network Planning: A Successful Case Study from North Central California" (2010) 53: 2 *Ocean & Coastal Management* 52 at 56.

<sup>110</sup>IUCN, see *supra* note 23 at 35; Adrian G. Davey, see *supra* note 72.

<sup>111</sup>*Rio Declaration*, Principle 15, the United Nations Conference on Environment and Development, Rio De Janeiro 3-14 June 1992, UNOR, Annex I, UN Doc.A/Conf.151/26/Rev.1 (Vol I) at 3, online: UNEP <<http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78>>, accessed the 10 February 2010.

<sup>112</sup>National Research Council, Committee on the Evaluation, Design, and Monitoring Marine Reserves and Protected Areas in the United States, see *supra* note 31 at 135.

- Sustainable financing: Financial sustainability of protected area was defined under the framework of the Convention of Biological Diversity as “the ability to secure stable and sufficient long-term financial resources, and to allocate them in a timely manner and appropriate from, to cover the full costs of protected areas (direct and indirect) and to ensure that protected areas are managed effectively and efficiently”.<sup>113</sup> Creating and maintaining a representative and effectively managed network of MPAs requires substantial funding and the scaling up from individual MPA to network asks for even more comprehensive funding mechanisms.<sup>114</sup> There are two major elements of costs relating to MPAs that need to be covered: compensation to local people for benefits foregone by the establishment of an MPA and the management costs for the MPA.<sup>115</sup>
- The formation of social marine protected area networks: finally, to maximize the benefits of the process of networking MPAs; social networks of MPA-based people at different levels (local, national, regional and international) should equally be formed. Practical experiences have shown that such social networks can participate in the management and financing of MPAs, share lessons and in management between practitioners and develop a collective information database about MPAs.<sup>116</sup> Members of a social network can include community members, traditional leaders, conservation staff, inter-disciplinary academics and researchers, donors and decision-makers.<sup>117</sup>

### ***Establishment of Transboundary Marine Protected Areas***

When a MPAs network is established at the bilateral or regional level, relevant countries might need to designate transboundary MPAs to protect sites or habitats that lie across the boundary or in the border region. There is no single model to establish transboundary protected areas. Neighbouring countries can establish protected areas that are adjacent to each other or

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<sup>113</sup>Nigel Dudley *et al.*, see *supra* note 96 at 62.

<sup>114</sup>IUCN, see *supra* note 23 at 88; Adrian G. Davey, see *supra* note 72.

<sup>115</sup>Graeme Kelleher & Adrian Phillips (*eds*), see *supra* note 29 at 53.

<sup>116</sup>Patrick Christie & Alan T. White, “Best Practices in Governance and Enforcement of Marine Protected Areas: An Overview” in FAO/Japanese Government Cooperative Programme, see *supra* note 31 at 196.

<sup>117</sup> Locally-Managed Marine Area Network, *What is the LMMA Network*, online:

Lmmanetwork <[http://www.lmmanetwork.org/Site\\_Page.cfm?PageID=8](http://www.lmmanetwork.org/Site_Page.cfm?PageID=8)>, accessed the 2 July 2010.

protected areas that are close to the boundary but not adjacent to each other. They can also establish a protected area on one side of the boundary and implement other measures of natural resource management or conservation on the other side.<sup>118</sup>

Relating to transboundary adjacent protected areas, there are six levels of cooperation, ranging from no-cooperation at all to full cooperation with joint planning and management of activities (for more details see table below).<sup>119</sup>

<b>Levels of Cooperation</b>	<b>Characteristics</b>
No-cooperation	No sharing or cooperation in any specific issue
Communication	Some two-way communication between Pas
Consultation	Notification of actions affecting the adjacent PA
Collaboration	Coordinated planning and consultation of the other PA before taking action
Coordination of planning	Treating the whole area as a single ecological unit
Full cooperation	Joint planning and management

**Table 1 Levels of Cooperation between Transboundary Adjacent PAs**

Trevor Sandwith, see *supra* note 119

#### **4. The Establishment of a Regional Network of MPAs in Practice: Example of the Sulu-Sulawesi Marine Ecoregion**

The establishment of a potential bilateral MPAs network between China and Vietnam could benefit from the experience of many existing processes of establishing regional networks of MPAs in the world. A review of all relevant processes is surely useful to draw lessons which can be applicable to the South China Sea but such a research is beyond the scope of this paper. This section focuses rather on analysing how a regional network of MPAs is being implemented by three countries, also bordering the South China Sea, which are Indonesia, Malaysia and the Philippines in the Sulu-Sulawesi Marine Ecoregion.<sup>120</sup> For a better understanding of this process, a general description of its ecological and socioeconomic importance as well as the history of the establishment of the region's general framework for the conservation of the marine environment is given beforehand.

<sup>118</sup>Trevor Sandwith, see *supra* note 26 at 15.

<sup>119</sup>Trevor Sandwith, *ibid.* at 34.

<sup>120</sup> In this paper Sulu-Sulawesi is synonym to Sulu-Celebes.

### ***Ecological and socioeconomic characteristics of the Sulu-Sulawesi***

The Sulu-Sulawesi Ecoregion is located in the Indo-West Pacific, within 1°30 to 12°00 N latitude and 117°00 to 127°00 E longitude. It has an area of about a million square kilometers, covering the territories of Indonesia, Malaysia and the Philippines. The marine region is comprised of the Sulu Sea, the Sulawesi Sea and Philippine inland seas.<sup>121</sup>

The Sulu-Sulawesi is an outstanding marine ecoregion for biodiversity. It is part of the Coral Triangle, the highest coral and reef fish diversity in the world with recorded numbers of 500 and 1200 species respectively. Many species listed in the IUCN's Red List of Threatened Species such as sea turtles, giant clams, whale sharks and seahorses are found in this area. The region is also characterized by diverse and productive ecosystems which include mangrove forests, seagrass beds, coral reefs and soft-bottom and pelagic environments. The region is inhabited by about 35 million people from at least 50 indigenous cultural groups.<sup>122</sup>

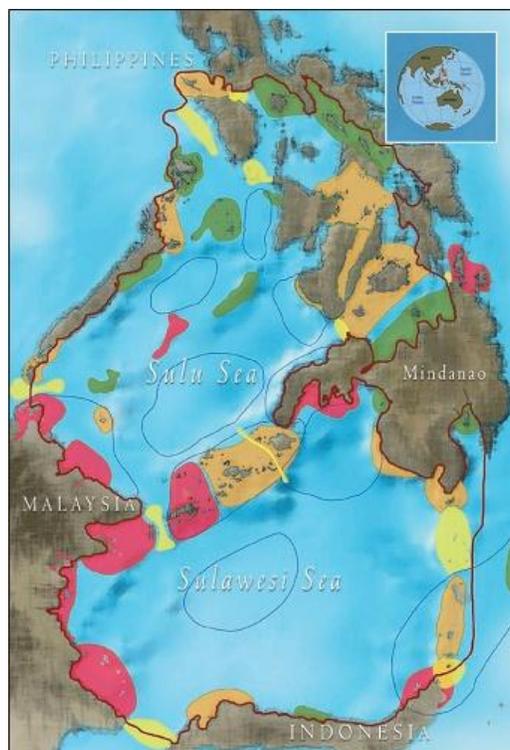
From an economic perspective, the Sulu-Sulawesi is significant to Indonesia, Malaysia and the Philippines for fisheries, tourism and navigation. It is a critically important fishery area that provides food for coastal communities and highly prized species for commercial fisheries such as Napoleon wrasse, groupers, snappers, migratory tuna, billfishes, seerfishes, barracudas, mackerels, rainbow runners and dolphin fishes. The average annual production from capture fisheries alone is about 2.3 million tons with a value estimated at 1 billion USD. Tourism is also well developed in the Malaysian and Philippine parts of the region and is expanding in the Indonesian part. The rich habitats and diversity of marine life make Sulu-Sulawesi a global priority destination for scuba divers and snorkelers, and for environmental tourism based on its physical beauty, biological richness and cultural diversity.<sup>123</sup>

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<sup>121</sup> WWF Sulu-Sulawesi Marine Ecoregion Conservation Program, see *Framework for a Network of Marine Protected Areas in the Sulu-Sulawesi Marine Ecoregion* (Quenzon: WWF-SSME Program, 2004) 13.

<sup>122</sup> *Ibid.* at 13; Evangeline F.B. Micalat, Jose A. Ingles & Jose Noel B. Dumaup, "Planning across Boundaries for the Conservation of the Sulu-Sulawesi Marine Ecoregion" (2006) 49: 9 – 10 *Ocean and Coastal Management* 597 at 599; Jose Noel B. Dumaup *et al.*, *Conservation Plan for the Sulu-Sulawesi Marine Ecoregion* (Quenzon City: Sulu-Sulawesi Marine Ecoregion Program, 2004) 68.

<sup>123</sup> WWF Sulu-Sulawesi Marine Ecoregion Conservation Program, see *supra* note 121 and Evangeline F.B. Micalat, Jose A. Ingles & Jose Noel B. Dumaup, *ibid.* at 599.



**Figure 2**Sulu-Sulawesi Sea

WWF Sulu-Sulawesi Marine Ecoregion Conservation Program, *Framework for a Network of Marine Protected Areas in the Sulu-Sulawesi Marine Ecoregion* (Quenzon: WWF-SSME Program, 2004) 13

### ***The Process of Building a Regional Framework for the Protection of the Sulu-Sulawesi Ecoregion***

In 2001, a Biodiversity Vision for the Sulu-Sulawesi was formulated by over 70 experts representing academe, governments and non-governmental groups from three countries Indonesia, Malaysia and the Philippines but also from Australia and the United States.<sup>124</sup> The vision set a 50-year goal to make the Sulu-Sulawesi a region that “remains to be globally unique and a center of diversity”, a “highly productive ecoregion” and “an ecoregion where biodiversity and productivity are sustained through the generation by participatory and collaborative management across all political and cultural boundaries”.<sup>125</sup> A total of 58 priority conservation

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<sup>124</sup> Evangeline F.B. Micalat, Jose A. Ingles & Jose Noel B. Dumaup, see *supra* note 122 at 601.

<sup>125</sup> Jose Noel B. Dumaup *et al.*, see *supra* note 122 at 21.

areas were also identified which represented the biodiversity and natural processes in the ecoregion.<sup>126</sup>

Guided by the Biodiversity Vision, a Conservation Plan for Sulu-Sulawesi Marine Ecoregion was developed through a participatory process with the organization of 12 workshops across three countries and the participation of 153 stakeholder organizations from the local and national levels.<sup>127</sup> The Plan determined 10 objectives and set actions to be undertaken by the three countries, individually or jointly, in the next 10 years to achieve the Biodiversity Vision.<sup>128</sup>

The objectives of the Conservation Plan for Sulu-Sulawesi Marine Ecoregion are:

- To establish management strategies and coordinated institutions for effective ecoregional conservation;
- To establish and manage a functional integrated network of priority conservation areas to ensure ecological integrity;
- To develop sustainable livelihood systems that support marine and coastal conservation across the ecoregion;
- To shape economic development compatible with biodiversity conservation;
- To enhance understanding of biodiversity resources and factors affecting them to form basis for management decisions;
- To develop communication, education and outreach program and strategies to motivate people to take conservation action;
- To develop a sustainable financing mechanism to support the cost of conservation and resource management;
- To build and enhance capacity of stakeholders to effectively manage the conservation of the Sulu-Sulawesi Marine Ecoregion;
- To implement coordinated protection of threatened marine species to ensure maintenance of viable populations and protection of critical habitats;

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<sup>126</sup> See Evangeline F.B. Miclat, Jose A. Ingles & Jose Noel B. Dumaup, see *supra* note 122 at 601 and Jose Noel B. Dumaup *et al.*, *ibid.* at 23.

<sup>127</sup> Evangeline F.B. Miclat & Romeo B. Trono, “One Vision, One Plan, Common Resources, Joint Management” Vol. 15 No. 1 (July 2008) *Tropical Coasts: Conserving the Sulu-Sulawesi Seas* 4.

<sup>128</sup> Evangeline F.B. Miclat, Jose A. Ingles & Jose Noel B. Dumaup, see *supra* note 122 at 602; for the details about the objectives and action of the Conservation Plan for Sulu-Sulawesi Marine Ecoregion, see Jose Noel B. Dumaup *et al.*, see *supra* note 122.

- To improve coastal, oceanic and other types of fisheries resource conditions and management by developing a framework strategy, institutions and appropriate interventions.<sup>129</sup>

In 2004, the Conservation Plan for Sulu-Sulawesi Marine Ecoregion was adopted by a tri-national Memorandum of Understanding (MOU) signed by Ministers representing Indonesia, Malaysia and the Philippines.<sup>130</sup> The MOU stated that parties shall endeavour to take necessary steps to encourage, facilitate and promote cooperation in the areas identified by the Conservation Plan. A Tri-National Committee which consists of representatives of the designated national authorities of the Parties was also set up to implement the Conservation Plan.<sup>131</sup> The MOU was then ratified by the Government of Malaysia, Philippines and Indonesia respectively in January 2005, June 2005 and February 2006 to take effect until February 2016.<sup>132</sup>

The first meeting of the Tri-National Committee was convened in 2006, Indonesia. At this meeting, three technical/scientific subcommittees were established under its framework to respond to major issues in the Sulu-Sulawesi Ecoregion, namely the Sustainable Fisheries Subcommittee, the MPAs and Networks Subcommittee and the Endangered, Charismatic and Migratory Species Subcommittee. It was agreed that every year the Tri-National Committee would convene and discuss the achievements, progress and lessons learned from the work of each Subcommittee.<sup>133</sup>

In 2008, a project aiming to improve the condition of fisheries and their habitats in the Sulu-Sulawesi Marine Ecoregion, which was agreed at the Sub-committee on Sustainable Fisheries was proposed to the Global Environmental Facility and approved for funding. This project has begun to be implemented since June 2010.<sup>134</sup>

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<sup>129</sup> Jose Noel B. Dumaupet *al.*, *ibid.* note 128.

<sup>130</sup> Evangeline F.B. Micalat & Romeo B. Trono, see *supra* note 127 at 6.

<sup>131</sup> For the detailed content of the MOU, see “Memorandum of Understanding between the Government of the Republic of Indonesia and the Government of Malaysia and the Government of the Republic of the Philippines on the Adoption of the Conservation Plan for the Sulu-Sulawesi Marine Ecoregion”, February 13<sup>th</sup> 2004, Vol. 15 No. 1 (July 2008) Tropical Coasts: Conserving the Sulu-Sulawesi Seas 34.

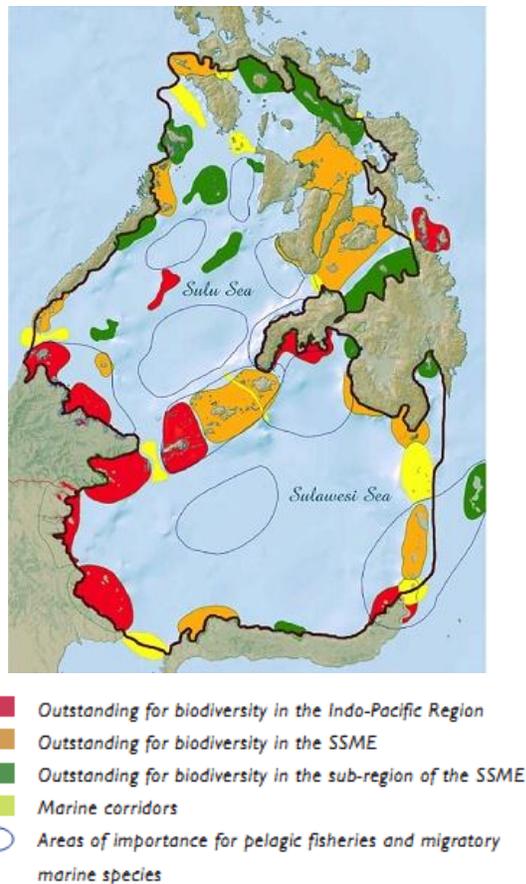
<sup>132</sup> Evangeline F.B. Micalat & Romeo B. Trono, see *supra* note 127 at 6.

<sup>133</sup> Sulu-Sulawesi Marine Ecoregion Tri-National Secretariat in Malaysia (Department of Fisheries-Sabah), “Tri-National Governance of the Sulu-Sulawesi Marine Ecoregion” 15:1 (July 2008) Tropical Coast: Conserving the Sulu-Sulawesi Seas 10.

<sup>134</sup> See UNDP/GEF Project, “Sulu-Celebes Sea Regional Fisheries Management”, online: Sulu-Celebes Sea Sustainable Fisheries Management <<http://scfishproject.iwlearn.org/about>>, accessed September 16<sup>th</sup> 2011.

### *MPAs Network under the Framework of the Conservation Plan for Sulu-Sulawesi Marine Ecoregion process*

The use of MPAs and MPAs network as tool for the protection of the Sulu-Sulawesi Marine Ecoregion has received attention early in the process. As stated above, a total of 58 priority conservation areas were identified in the Biodiversity Vision for the Sulu-Sulawesi in 2001. They include areas which are considered having outstanding biodiversity value in the Indo-Pacific Region, the Sulu-Sulawesi Marine Ecoregion itself and its subregions as well as corridors and large areas which are major migratory routes of marine species and important for pelagic fisheries.<sup>135</sup>



**Figure 3** Priority Conservation Areas for the Sulu-Sulawesi Marine Ecoregion

WWF Sulu-Sulawesi Marine Ecoregion Conservation Program, *Framework for a Network of Marine*

*Protected Areas in the Sulu-Sulawesi Marine Ecoregion* (Quenzon: WWF-SSME Program, 2004) 13

<sup>135</sup>Jose Noel B. Dumaupet *al.*, see *supra* note 122 at 22; WWF Sulu-Sulawesi Marine Ecoregion Conservation Program, see *supra* note 121, figure 1 at 13.

In 2003, a workshop was convened by the WWF and the Borneo Marine Scientific Research Institute, Universiti Malaysia Sabah in collaboration with the Department of Fisheries-Sabah and Sabah Wildlife Department in Kota Kinabalu, Malaysia to develop the Framework for a Network of Marine Protected Areas the Sulu-Sulawesi Marine Ecoregion.<sup>136</sup> The workshop was able to agree on a draft General Framework for a Network of Marine Protected Areas in the Sulu-Sulawesi Marine Region. It determined guiding principles and decision rules for the establishment a network of MPAs in the region based on both biophysical and socio-economic criteria.<sup>137</sup> Participants also set out actions to implement this Framework which includes actions of immediate priority (immediate to two years), intermediate priority (one to five years) and long-term priority (three to ten years).<sup>138</sup>

In the Conservation Plan for Sulu-Sulawesi Marine Ecoregion adopted in 2004, marine protected areas related activities were mentioned in action objectives at both the ecoregional level and national level. For instance, the second objective for actions to be implemented at the ecoregional level was to establish and manage a functional integrated network of priority conservation areas to ensure ecological integrity. Activities planned to achieve this objective included to review and approve the Framework for a Network of Marine Protected Areas for the Sulu-Sulawesi Marine Ecoregion and to make an inventory of existing MPAs in priority conservation areas. At the national level, Indonesia would determine the type of regulations needed to better manage the protected areas, which would be then legislated. New MPAs would be established and a network organized. The Philippines would proceed to an assessment of existing MPAs within the Sulu-Sulawesi Marine Ecoregion. Based on this assessment, new areas would be identified and/or existing areas expanded using the criteria set for the Sulu-Sulawesi MPA network. Malaysia also planned to establish new conservation areas as potential protected areas in its territories located in the Sulu-Sulawesi Marine Ecoregion as well as to establish linkages with other protected areas in the region.<sup>139</sup>

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<sup>136</sup> WWF Sulu-Sulawesi Marine Ecoregion Conservation Program, see *supra* note 121 and Jose Noel B. Dumaupet *al.*, see *supra* note 122 at 30.

<sup>137</sup> For the details about those criteria, see WWF Sulu-Sulawesi Marine Ecoregion Conservation Program, see *supra* note 121, Table 5 & 6.

<sup>138</sup> For details, see WWF Sulu-Sulawesi Marine Ecoregion Conservation Program, see *supra* note 121 at 37.

<sup>139</sup> For details see and Jose Noel B. Dumaupet *al.*, see *supra* note 122 at 31.

The Subcommittee on Marine Protected Areas and Networks was established under the framework of the Tri-National Committee in 2006. It has the objectives to support the effective management of existing and new MPAs and networks and to maintain the full range of sustainable marine resources and provide the long-term socioeconomic and cultural needs of human communities in the Sulu-Sulawesi Marine Ecoregion and to support the establishment of new MPAs and Networks in the context of ecosystem-based management.<sup>140</sup>

Finally, one of the planned outcomes of the Project “Sulu-Celebes Sea Regional Fisheries Management”, starting to be implemented in 2010, is to increase fish stocks at five to ten percent at demonstration sites. It consists of promoting and adopting an integrated fisheries management approach, namely the “Growth, Control and Maintenance” mechanism, to achieve target of increasing fish stock at demonstration sites and replication sites in three countries.<sup>141</sup> One of the measures to be implemented under this approach is to establish networks of resilient MPAs for critical habitats and open water areas to protect spawning, migration routes, populations of mature fish, endangered species and other resources with no-take fish sanctuaries and management zones.<sup>142</sup>

## **5. Perspectives for the establishment of a Bilateral MPAs Network between Vietnam and China**

This final section provides some general perspectives about how a bilateral network of MPAs between Vietnam and China might be established and managed, in order to contribute to the preservation of the marine living resources of the South China Sea and the maintenance of a good relationship between the two nations. The specific issues dealt with in this section are the geographical scope of the network, its governing mechanism, joint marine scientific research between Vietnam and China, options for the designation of individual MPAs and the involvement of affected fishermen into the decision-making process.

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<sup>140</sup> Evangeline F.B. Micalat & Romeo B. Trono, see *supra* note 127, Box 2.

<sup>141</sup> UNDP, *Sulu-Celebes Sea Sustainable Fisheries Management Project*, online: The UNDP/GEF Project “Sulu-Celebes Sea Regional Fisheries Management” <<http://scfishproject.iwlearn.org/publications/projectdocuments/project-document/view>>, accessed September 13<sup>th</sup> 2011 at 45.

<sup>142</sup> UNDP, *ibid.* note 141 at 47.

### ***The Geographical Scope of the Network: the North-Western Part of the South China Sea***

To help achieving both the conservation of marine living resources and the preservation of a good relation between Vietnam and China, both ecological and political criteria are important in the determination of the geographical scope of the bilateral network of MPAs. The network should not only be established with a consideration of relevant existing biogeographical units in the area but also need to include areas where there are overlapping claims between two countries. From this perspective, a bilateral network of MPAs between Vietnam and China should cover and not cover the following:

- The Gulf of Tonkin Marine Ecoregion as it is defined by WWF: according to WWF, a large part of the Gulf of Tonkin is classified as the Gulf of Tonkin Marine Ecoregion, one of the 232 ecoregions in the world.<sup>143</sup> The ecoregion, defined by the WWF as “areas of relative homogeneous species composition, clearly distinct from adjacent systems”, is the smallest unit in its biogeographical classification used for conservation.<sup>144</sup> The Gulf of Tonkin Marine Ecoregion includes coastal waters of the Northern Vietnam and Southern China, waters delimited by the Agreement of Vietnam and China relating to the Delimitation of the Gulf of Tonkin in 2000<sup>145</sup> and the mouth of the Tonkin Gulf still under negotiations for delimitation between two countries<sup>146</sup>.

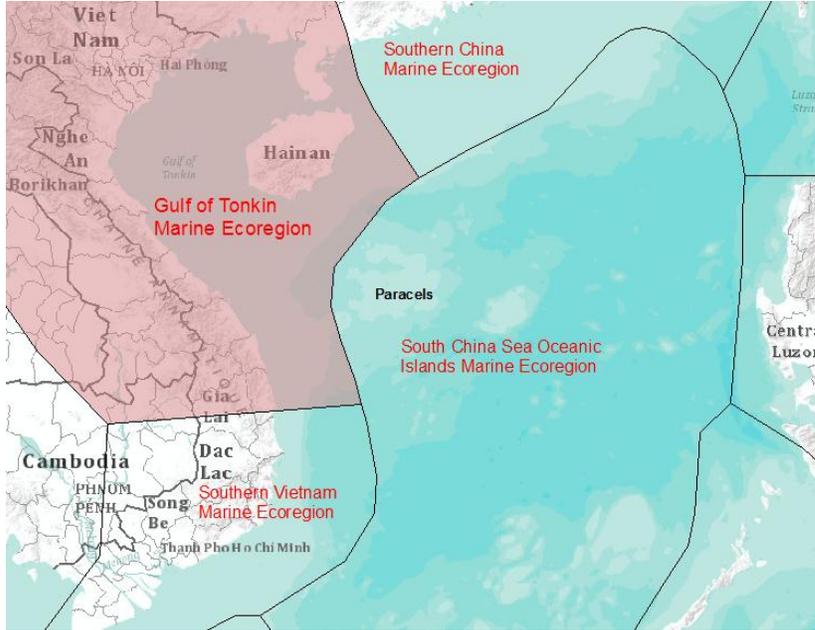
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<sup>143</sup>Mark D. Spalding *et al.*, see *supra* note 86.

<sup>144</sup>*Ibid.* note 143 at 575.

<sup>145</sup>*Agreement between the Socialist Republic of Vietnam and the People Republic of China relating to the Delimitation of the Territorial Sea, Exclusive Economic Zone and Continental Shelf in the Tonkin Gulf* (Vietnamese version), December 15<sup>th</sup>2000, online: National Boundary Committee - Ministry of Foreign Affairs of Vietnam <<http://biengioilanhtho.gov.vn/vie/hiepdinhgvanuocchxhcnviet-nd-bca98eb3.aspx>>, accessed September 18<sup>th</sup>2011.

<sup>146</sup> Unfortunately, the exact coordinates of this area could not be found.



**Figure 4**The Gulf of Tonkin Marine Ecoregion

Created by author, 2011

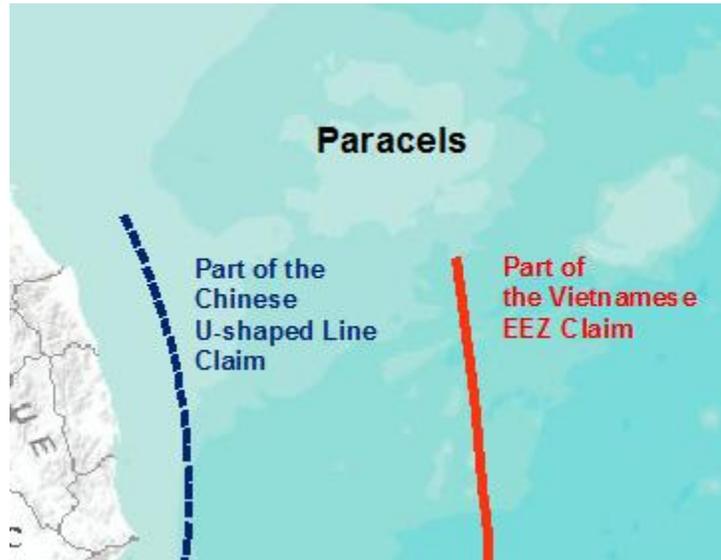
- All areas that are agreed by China and Vietnam as disputed areas. Currently, only one area can fall into this type, which is the mouth of the Tonkin Gulf that is under delimitation negotiations between two countries. It is already included in the above-mentioned Gulf of Tonkin Marine Ecoregion.



**Figure 5**The Mouth of the Tonkin Gulf

Created by author, 2011

- All areas where there are overlapping claims between two countries, but the status of disputed area is protested by at least one party. Two of such areas can be pointed out: the Paracels islands (of which the disputed area status is contested by China) and part of the exclusive economic zone of Vietnam (of which the disputed area status is contested by Vietnam and other countries<sup>147</sup>)



**Figure 6 Overlapping Claims Area between China and Vietnam of which the status of disputed area is protested by at least one party**

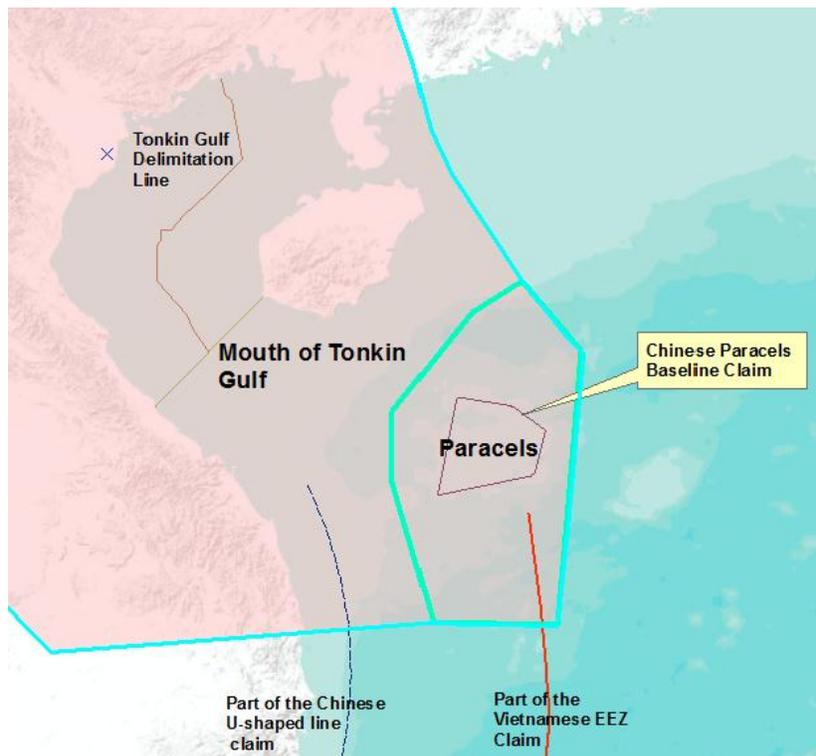
Created by author, 2011

<sup>147</sup> It seems that the position of considering part of the exclusive economic zone of coastal countries in the South China Sea as defined by the United Nations Convention on the Law of the Sea as disputed areas is contested also by a number of other countries, including those from outside the region. For instance, in a *Note Verbale* relating to Chinese *Notes Verbales* objecting the Malaysia-Vietnam’s joint submission for the outer limits of the continental shelf, the Philippines stated “...since the adjacent waters of the relevant geological features are definite and subject to legal and technical measurement, the claim as well by the People’s Republic of China on the “*relevant waters as well as and subsoil thereof*” (sic)...outside the aforementioned relevant geological features in the KIG (*Spratlys*) [emphasis added] would have no basis in international law, specifically UNCLOS. *With respect to these areas, sovereignty and jurisdiction or sovereign rights, as the case maybe, necessarily appertain to the appropriate coastal and archipelagic state – the Philippines - to which these bodies of waters as well as seabed and subsoil are appurtenant, either in the nature of Territorial Sea, or 200 M Exclusive Economic Zone (EEZ), or Continental Shelf (CS) in accordance with Articles 3, 4, 55, 57, and 76 of UNCLOS*” [emphasis added] see *Note Verbale* No.000228 of the Permanent Mission of the Republic of Philippines to the United Nations, April 5<sup>th</sup> 2011. More recently, in a resolution adopted on June the 27<sup>th</sup> 2011 relating to the Viking 2 incident, the United States Senate stated “Whereas, on June 9, 2011, 3 vessels from China, including 1 fishing vessel and 2 maritime security vessels, ran into and disabled the cables of an exploration ship from Vietnam, the VIKING 2; Whereas that use of force occurred *within 200 nautical miles of Vietnam, an area recognized as its Exclusive Economic Zone*” [emphasis added], see United States Senate, “U.S. Senate Unanimously “Deplores” China’s Use of Force in South China Sea” (June 27<sup>th</sup> 2011) Press Release, online: Jim Webb, U.S Senator for Virginia home page <<http://webb.senate.gov/>>, accessed September 3<sup>rd</sup> 2011.

- Besides, the bilateral network should not cover any area claimed by other countries in the South China Sea. If it does, it will certainly provoke protestation from the relevant country or countries and not help to decrease the tension in the region. For the protection of those areas, a bilateral cooperation is not the solution but a trilateral or multilateral framework should be established.

From a jurisdictional point of view, a bilateral network of MPAs between China and Vietnam should cover three types of areas as following:

- Areas without overlapping claims between the two countries, namely coastal waters of the South-Western region of China and North-Western region of Vietnam and portion of the Gulf of Tonkin which was delimited;
- Agreed disputed areas, namely the portion of the sea subject to negotiations between Vietnam and China relating to the delimitation of the mouth of the Tonkin Gulf; and
- Areas with overlapping claims but the disputed status is contested by at least one country, namely the Paracels and the portion of the Northern exclusive economic zone of Vietnam.



**Figure 7** Geographical Scope of the Network

Created by author, 2011

### ***Governing Mechanism of the Network***

A joint mechanism should be established to govern the network of MPAs comprising an equal number of representatives from relevant agencies of both countries. Its main functions would include: to determine the objectives of the network; to identify important marine areas in the region that would need to be protected to achieve those objectives; to suggest to both governments which conservative measures to be adopted; and to monitor the achievements of the network. It could also suggest the implementation of cooperative activities between two countries to enhance the effectiveness of the network and resolve disputes relating to it. A model for the joint mechanism for the implementation of the bilateral network of MPAs between Vietnam and China could be the former Joint Fishery Committee between China and Vietnam in the Gulf of Tonkin, established by the Fisheries Cooperation Agreement in the Gulf of Tonkin, signed between China and Vietnam in 2000.<sup>148</sup>

### ***Implementation of Joint Marine Scientific Research***

As stated above, for a MPAs network to be successful, one of the important condition is that it needs to be designed based on best available data and information relating to the geological, oceanographical, ecological, biological, biodiversity and socioeconomic situation of the region. Research is important not only at the beginning stage to identify important areas that need protection but also at the later stage to monitor the effectiveness of the network. For this reason, two countries need to engage in conducting joint marine scientific research in the agreed area.

The cooperation between China and Vietnam in marine scientific research is supported by both the UNCLOS and their bilateral agreement. Article 123 of the UNCLOS stated that states bordering an enclosed or semi-enclosed sea shall endeavour to coordinate their scientific research policies and undertake where appropriate joint programmes of scientific research in the area.<sup>149</sup> Besides, article 241 states that marine scientific research activities cannot constitute legal basis for any claim for the marine environment or its resources.<sup>150</sup> Bilaterally, the “common

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<sup>148</sup> *Agreement between the People Republic of China and the Socialist Republic of Vietnam on Cooperation in Fisheries in the Gulf of Tonkin*, 25 December 2000, online: Center of South China Sea Studies - Academy of Diplomacy of Vietnam <[http://nghiencuubiendong.vn/trung-tam-du-lieu-bien-dong/doc\\_details/89-hip-nh-hp-tac-ngh-ca--vnh-bc-b-gia-chinh-ph-nc-cng-hoa-xa-hi-ch-ngha-vit-nam-va](http://nghiencuubiendong.vn/trung-tam-du-lieu-bien-dong/doc_details/89-hip-nh-hp-tac-ngh-ca--vnh-bc-b-gia-chinh-ph-nc-cng-hoa-xa-hi-ch-ngha-vit-nam-va)>, accessed 6 April 2010, see art. 13.

<sup>149</sup> *United Nations Convention on the Law of the Sea*, see *supra* note 16, art. 123.

<sup>150</sup> *Ibid.* note 149, art. 241.

perceptions of the leaders of the two countries in peacefully solving differences on the sea through friendly talks and negotiations”, acknowledged in their joint statements issued during visits of senior leaders, stated that the two sides have agreed to boost cooperation in the fields of, *inter alia*, oceanography research and environmental protection.<sup>151</sup> Besides, Vietnam and China also agreed to implement surveys in the mouth of the Tonkin Gulf under the framework of the China – Vietnam negotiations relating to the delimitation and joint development in this area.<sup>152</sup> These provisions have been reaffirmed by the recent Vietnam-China Agreement on basic principles guiding the settlement of sea-related issues, signed by representatives of both Governments in Beijing in October 12<sup>th</sup> 2011 at the occasion of the visit of the Vietnam Communist Party Secretary-General Nguyễn Phú Trọng to China.<sup>153</sup>

Lessons for the cooperation in marine scientific research between Vietnam and China can be learned from the Philippines-Vietnam Joint Oceanographic Marine Scientific Research Expedition in the South China Sea programme. This programme was agreed by President Fidel Ramos of the Philippines and President Lê Đức Anh of Vietnam in 1994 and conducted from 1996 to 2007. During these 11 years, four expeditions were organized with as the result, many data have been collected and analyzed, contributing to further understanding of oceanographic, biological, geological characteristics of the South China and its biodiversity.<sup>154</sup>

### ***Options for the Establishment and Management of Specific MPAs***

For the designation and management of specific MPAs, components of the bilateral network, a combined use of MPAs and transboundary MPAs can be considered for the protection of the North-West part of the South China Sea depending on which above-mentioned type of area needs protection:

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<sup>151</sup> - “Press interviews Deputy Minister of Foreign Affairs Ho Xuan Son on meeting with Chinese State Councillor” (June 18<sup>th</sup> 2011) VNA, online: Ministry of Foreign Affairs of Vietnam <[http://www.mofa.gov.vn/en/nr040807104143/nr040807105001/ns110628095717/newsitem\\_print\\_preview](http://www.mofa.gov.vn/en/nr040807104143/nr040807105001/ns110628095717/newsitem_print_preview)>, accessed September 19<sup>th</sup> 2011.

<sup>152</sup> Xuân Linh, “Vietnam and China will implement joint surveys in the mouth of the Tonkin Gulf” [translated from Vietnamese: “Việt – Trung sẽ cùng khảo sát cửa Vịnh Bắc Bộ”] (January 7<sup>th</sup> 2009) *Dân Trí*, online: *Dân Trí* <<http://dantri.com.vn/c36/s20-301933/viet-trung-se-cung-khao-sat-cua-vinh-bac-bo.htm>>, accessed September 18<sup>th</sup> 2011.

<sup>153</sup> For details see “Vietnam, China established principles of setting sea issues” (October 12<sup>th</sup> 2011) *Vietnam News Agency* & “China – Vietnam sign accord on resolving maritime issues” (October 12<sup>th</sup> 2011) *Xinhua*.

<sup>154</sup> See Henry S. Bensurto Jr., “Cooperation in the South China Sea: Views on the Philippines – Vietnam Cooperation on Maritime and Ocean Concerns”, paper presented at the 2<sup>nd</sup> *International Workshop “South China Sea: Cooperation for Regional Security and Development”*, November 11 – 12 2010, Ho Chi Minh City, Vietnam.

- Areas without overlapping claim should be the easiest ones. Two countries can establish MPAs under their respective national law. The regulations relating to fisheries, shipping, oil and gas exploitation adopted for these MPAs will be enforced by relevant enforcement authorities of each country. MPAs that are located adjacent to the agreed boundary in the Tonkin Gulf can be designated as a single transboundary MPA and managed cooperatively.
- For the agreed disputed area between Vietnam and China, the two countries could consider establishing jointly a transboundary MPA in the disputed area. The establishment and management of such an MPA could be done through a bilateral agreement between China and Vietnam. The two countries could agree on which conservative measures to be adopted for the area and the enforcement of these measures can be ensured by joint patrols of two countries' relevant authorities. If necessary, MPAs could also be created in areas under national jurisdiction of two countries, which are adjacent to the transboundary MPA in the disputed areas to have coordinated management measures.
- Finally, the areas where the disputed status is contested by one party are the most challenging ones as the adoption of any bilateral measure would be considered by the party which contests its disputed status an indirect recognition of the other's claim. This challenge can be overcome if two countries have harmonized conservative rules relating to the MPA (which could be accomplished based on the recommendations of the above-mentioned joint governing mechanism of the network) and accept a flag state jurisdiction to enforce them. For instance, if it happens that an MPA is needed for the protection of the Paracels. Vietnam and China could designate a MPA under their national laws respectively at the same location. Since their relevant laws were harmonized, the same conservative measures would be applied to this MPA. Relating to the enforcement of these measures, the two countries could refrain to enforce their national law towards the other's vessels but both will have jurisdiction towards vessels from third parties.

Experiences for this type of arrangement can be drawn from some fisheries agreements which are qualified as “grey zone” or “light grey zone” agreements. In those agreements, each participating state agrees to refrain from enforcing its fishery law or regulations against vessels flying the flag or licenced by the other one and both states have

jurisdiction towards third-party vessels.<sup>155</sup> The difference between those two types of agreements is that the former<sup>156</sup> ones have a well-defined area of application, meanwhile the latter<sup>157</sup> do not have a clearly determined area for application. Nguyễn Đăng has argued that “grey zone” type of fishery agreements is “the most apt in the South China Sea setting” to achieve both objectives of sustainable fisheries and the prevention of tension.<sup>158</sup> However, it is of the opinion of the author of the paper that in areas with overlapping claims where the status of disputed area is contested by at least one party, due to the unclear extent of the claims of the parties,<sup>159</sup> a “light grey zone” agreement might be more suitable.

### ***Involvement of Fishermen in the Decision-Making Process***

Another important condition for the successful establishment of any MPAs network is the involvement of relevant stakeholders. Affected stakeholders of the establishment of a specific MPA would depend on which activities conservative measures are adopted for in this area: oil and gas, shipping or fisheries. Most of time, some kind of restriction would be applied to fishing activities in the MPA. In this case, fishermen will need to be allowed to participate into the decision-making process relating to the MPA.

The involvement of fishermen in the process of establishing an MPAs network in the North-West part of the South China Sea may be more complicated due to the sovereignty dispute between two countries. To safeguard the territorial claims, the nationality of the fishermen allowed to participate would need to vary depending on which area the MPA is designated. If the MPA is designated in an area without overlapping claims, only national fishermen of the country having ownership of the area will be involved as fishermen nationals of the other country are not

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<sup>155</sup> For more details about the different types of fishery agreement, including “grey zone” and “light grey zone” ones, see Nguyen Dang Thang, *supra* note 14; see also SuyPyo Kim, *supra* note 14 at 107.

<sup>156</sup> For example the *Agreement of 11 January 1978 between Norway and the Soviet Union on a Temporary Practical Arrangement for Fishing in an Adjacent Area in the Barents Sea, with Attached Protocol on a Temporary Arrangement for Fishing in an Adjacent Area in the Barents Sea, Norway and Soviet Union*, *Overenskomst med Fremmede Stater* [Norwegian Treaty Series](1978), 436.

<sup>157</sup> For example *Protocol amending the Convention between Canada and the United States of America for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea, Canada and the United States*, see *supra* note 13.

<sup>158</sup> *Ibid.* note 155.

<sup>159</sup> China has not provided yet the coordinates of its U-shaped line claim in the South China Sea. Meanwhile, both Vietnam and China have not expressed their position relating to the limits of the appurtenant waters of the Paracels yet.

allowed to fish there anyway. If the MPA is designated in an agreed disputed area, fishermen from both countries who used to fish in the area should be allowed to participate to the process. Finally, in case the MPA is designated in areas where the disputed status is contested by at least one party and if both countries have flag state jurisdiction, only fishermen nationals of the country designating the MPA will need to be involved as conservative measures adopted in this area will only be enforced to them.

Mechanisms to get affected fishermen to involve in the establishment of an MPA include direct participation or indirectly participating via the designation of community representatives, experts, local government officials or non-governmental organizations.<sup>160</sup>

## Conclusion

A bilateral network of MPAs between Vietnam and China in the North – Western part of the South China Sea could bring about many benefits, not only for the two countries in particular but also for the South China Sea region in general. It could be a very effective tool to preserve the marine living resources in the South China Sea, not only the commercial fishery resources but also important marine habitats and endangered species. It offers opportunities for two countries to cooperate to implement their different international and regional engagements in the area of marine conservation without putting at risk their territorial and sovereignty claims. From this perspective, it could contribute to the improvement of the relationship between China and Vietnam and decreasing the tension in the South China Sea.

Certainly, this network cannot solve the territorial dispute between two countries at sea and it does not even have any effect on those issues at all. However, this neutrality can play in its favour as such an endeavour can provide a framework for Vietnam and China to cooperate towards a healthy, productive and sustainable South China Sea without jeopardizing their position relating to their claims. It is actually in total accordance with the spirit of the Vietnam's joint development policy and China's "shelving disputes, joint development" suggestion.

Finally, this bilateral network of MPAs could be a first step towards and a component of a regional network of MPAs covering the whole South China Sea region. This broader network could provide the chance for a comprehensive protection of the South China Sea and allow the cooperation of all its coastal countries. It could be a good proposal to be implemented under the DOC, after the recent adoption of its Guidelines for the Implementation<sup>161</sup> in Bali last July.

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<sup>160</sup>Grazia Borrini-Feyerabend, see *supra* note 104 at 10.

<sup>161</sup> For the content of these Guidelines, see Ministry of Foreign Affairs of the People Republic of China, *Guidelines for the Implementation of the DOC*, online: Ministry of Foreign Affairs of the People Republic of China <<http://www.mfa.gov.cn/chn/pds/ziliao/zt/dnzt/yjcdm2/t844329.htm>>, accessed August 4<sup>th</sup> 2011.