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**DEGRADATION OF MARINE ENVIRONMENT IN  
SOUTHEAST ASIA: A STUDY OF CONFLICT AND  
COOPERATION AND LESSONS FOR SOUTH ASIA**

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**Abstract**

Southeast Asia, a region remarkably maritime in nature, consists of marine and coastal areas that are among the worlds most productive in terms of marine resources – both renewable and non-renewable. Because of economic benefits that can be derived from the rich and diverse ecosystems of the region, the coastal zones of Southeast Asia are densely populated accounting for nearly 60% of the region’s population. While the sea is a source of prosperity for all the coastal countries in the region, it is, at the same time, the source of a variety of dangers, unknown in any other part of the globe with the same intensity. These dangers include conflict over marine resources, marine environmental degradation, maritime disputes, non-state political violence and trans-national crimes. As a result, in the contemporary world, concern for maritime security is more at the forefront of Southeast Asia than in any other part of the world. While successful response to various forms of danger in the

maritime environment entails cooperation at the levels, national, regional and inter-regional, Southeast Asian cooperative endeavours at the mentioned levels are currently inadequate in terms of facing the dangers posed to its marine environment. However, in recent years, a host of structural, economic and normative factors are leading to greater cooperation among the Southeast Asian littorals in order to keep the marine environment of the region a safe and stable one. The paper tries to probe into the scenario of conflict and cooperation as prevalent in the present day marine environment of Southeast Asia and then examine whether a similar situation is discernible in case of South Asian marine environment too. In this respect, the paper argues that the lessons drawn from the current cooperative efforts of Southeast Asian states can be relevant for the littorals of South Asia as well.

**1. Introduction**

Southeast and South Asia are two distinct geographical entities with their respective marine environments. A marine environment includes the oceans and all seas and adjacent coastal areas, all of which form an integrated whole, and is an essential component of the global life support system.<sup>1</sup> It also provides the littoral states with nature gifted oceanic bounties and opportunities in several ways. Needless to mention, both Southeast and South Asia share marine environments that are recognized as the global centres of diversity for the flora and fauna of coral reefs and related ecosystems. These ecosystems and the bio-diversity they support are of significant social, economic and ecological importance. They provide support for important commercial and subsistence fisheries which in turn provide critical sources of food and income for a vast majority of the local communities. For many littoral countries, tourism activities based on

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<sup>1</sup> Mario Soares, *The Ocean: Our Future*, The Report of the Independent World Commissions on the Oceans, Cambridge University Press, Cambridge, 1998, p.34.

coral reefs and related ecosystems are also important sources of employment and foreign exchange earnings. Within such environments, marine and coastal inter-related ecosystems, mangroves, sea-grass beds and coral reefs in particular, are the location of spawning grounds and recruitment of many marine species that are exported to fishing grounds. Finally, it is the trade and commerce of the littoral states of the region among themselves and with the outside world that are assuming increasing importance for the regional countries and beyond. Hence, there is a rapid development of sea communication and navigation to meet the increasing demands of oceanic traffic in the current age of globalization.

While the benefits accrued from the Southeast and South Asian marine resources are enormous, the future of marine environments in the two regions looks murky due to their increasing degradation. In this connection, it is relevant to mention that in contemporary ocean management, the term marine degradation is used in a much wider and comprehensive sense to imply not only mere contamination of ocean waters by various pollutants, but also by a few other factors. These are:

- i. depletion of marine resources, both renewable and non-renewable, due to over exploitation;
- ii. damage to marine ecology and habitat by natural disasters;
- iii. presence of various dangers due to maritime boundary disputes, piracy, non-state political violence, transnational crimes etc;
- iv. dumping of toxic and hazardous materials in the oceans by clandestine agents; and finally,
- v. encroachment over the resources of the others for economic and profit motives by the powerful ones.

The comprehensive nature of marine degradation has propelled many ocean experts, strategists, scientists, environmentalists and the like to bring the concept under the rubric of marine security. Since security is related to perception of threats and conflicts, whether real or imaginary, there is no doubt that the issues mentioned above have the potentials for either generating conflicts in the oceans or for posing threats to the littoral states of the regions in one way or the other.

Judged in above light, the current marine environments of Southeast Asia and South Asia do not depict a healthy picture

respectively. All the indicators of marine degradation as understood in a broader sense are now present in the regions with increasing possibilities for conflict in the future in many ocean areas. In particular, the situation is more ominous in case of Southeast Asia where the sea dominates the region covering 80% of the area. While the sea is a source of prosperity for all the coastal countries in the region, it is at the same time the source of a variety of dangers, unknown in any other part of the globe with the same intensity, to menace not only the prosperity of local populations but as well to directly threaten the security of states. These dangers include conflict over marine resources, marine environmental degradation, maritime disputes, non-state political violence and trans-national crimes. As a result, in contemporary world, concern for maritime security is more at the forefront of Southeast Asia than in other parts of the world. This provides a rationale for studying the dynamics of conflict and cooperation as prevalent in Southeast Asian maritime environment and as well for drawing lessons from it for South Asian marine environment.

Towards this end, the paper seeks to study the following questions:

- i. What are the factors that contribute to the rapid degradation of marine environment in present day Southeast Asia? Where does the marine environment of South Asia stand at present compared to the one in the previous case?
- ii. What are the effects of such degradation on the littoral states of both the regions that depend on marine resources for their food, revenue and foreign exchange?
- iii. Does degradation affect the marine resource base in a manner so as to precipitate conflicts either between the states at the macro level or between the various stakeholders at the micro-level? and finally,
- iv. What are the possible avenues through which such degradation can be averted? In other words, what are the measures that the regional states are expected to take at their respective bilateral, regional and inter-regional levels?

These and other related questions would be addressed in the paper.

While the ongoing introduction constitutes Part 1 of the paper, Part 2 would be devoted to a comparative analysis of the degradation of marine environment in Southeast and South Asia. Part 3 is designed

to assess the consequences of marine degradation in Southeast Asia with a focus on the probable conflicts in a comparative perspective with South Asia. Part 4 would deal with the management of Southeast and South Asian marine environment highlighting the viable strategies for cooperation. Finally, an attempt would be made to visualize an outlook for the future.

## 2. The Degradation of Marine Environment in Southeast and South Asia: A Comparative Analysis

Before going into a discussion on the degradation of Southeast Asian marine environment, it is relevant to throw some light on oceanic matrix of the region. Southeast Asia as a geographic unit consists of highly fragmented land, interspersed among wide stretches of sea, and has an extremely long coastline. Physically, the region is divided into the continental part of mainland Asia, which consists of Myanmar, Thailand, and the Indo-Chinese states of Laos, Cambodia and Vietnam. The rest of the region is regarded as the archipelago of Southeast Asia that includes Peninsular Malaysia, Brunei, Singapore, Indonesia and the Philippines. These countries' combined coastlines total more than 100,100 km along different regional seas like South China Sea, Gulf of Thailand, Java Sea, Strait of Malacca, Indian Ocean, Banda Sea, Timor Sea, Arafura Sea, Celebes Sea, North Pacific Ocean, Sulu Sea, Luzon Strait, Philippines Sea, Johore Strait, Singapore Strait, Main Strait, Andaman Sea and Gulf of Tonkin. In essence, thus, Southeast Asia is more a maritime region and the whole body of water in the region covers 8.9 million square kilometres, representing about 2.5 of the world's ocean surface.

The marine and coastal areas of the region are among the world's most productive ones. The region's warm, humid tropical climate and high rainfall allow extensive coral reefs and dense mangrove ecosystems to flourish along the coastlines. It may be mentioned that over 30% of the world's coral reefs are found in Southeast Asia, especially around the archipelagos of Indonesia and the Philippines.<sup>2</sup>

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<sup>2</sup> 'Coral Reef Pollution in the South China Sea', compiled and edited by David Rosenberg and Miranda Hillyard, available online <http://community.middlebury.edu/~scs/miranda>, accessed 27 August 2005.

These coral reefs provide a habitat for the highest biological diversity in the world. Because of economic benefits that can be derived from these rich and diverse ecosystems, the coastal zones of Southeast Asia are densely populated. In fact, more than 60% of the Southeast Asians today live in or rely economically on the maritime zones.<sup>3</sup> About 60% of the regions animal protein comes from the sea.<sup>4</sup>

The economic activities of the people inhabiting the region are vigorous in nature, both at land and seas. The oceanic activities of the region include maritime trade, shipping, oil exploration and refinery, fishing, tourism and related industries. While the seas of Southeast Asia play an important role in the respective economies of the littoral states, the region's constantly expanding coastal population and development has made great demands on marine resources, with growing evidence seen in the further degradation of the marine environment and continued exploitation of living as well as non-living resources.<sup>5</sup> Currently, various land and marine based pollutants are compounding the degradation problem in the area in an unfettered manner. Among the land based sources, sewage discharged into the sea without treatment causes the maximum stress on the region's marine environment, threatening economically vital coastal areas including fishing industries. Sewage consists of various organic and inorganic wastes, agricultural and industrial wastes, wasters from run-off containing oil, hydrocarbons and heavy metals.<sup>6</sup> In addition, other land-based activities like agriculture, forestry, coastal construction, urban development and tourism are posing threats to Southeast Asian marine environment in several ways. All such land based human activities cause sedimentation – a major source of reef degradation in the area. Increased sedimentation also leads to a change in the composition of marine fauna, favouring more resilient species. Sedimentation also comes from soil erosion caused by

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<sup>3</sup> Lieutenant John F Bradford (US Navy), "The Growing Prospects for Maritime Security Cooperation in Southeast Asia", *Naval War College Review*, Summer 2005, Vo. 58., No.3., p.63.

<sup>4</sup> 'Coral Reef Pollution in the South China Sea', *op. cit.*

<sup>5</sup> L M Chou, "Marine Environmental Issues of Southeast Asia: State and Development", *Hydrobiologia*, Volume 285, No. 1-3, June 1994.

<sup>6</sup> 'Coral Reef Pollution in the South China Sea', *op. cit.*

mismanagement of watersheds, exploitation of mangroves, oil drilling and the dumping of terrestrial and marine mine tailing. Among the marine based sources of pollution, extremely destructive methods of fishing, especially in the Philippines, Indonesia and Malaysia, are the most serious ones. These methods include dynamite blasting and cyanide fishing that threaten both the coral and the fishes in the region. Next is the oil spills in the region that seriously affect marine life and sea birds. These can also have a very negative impact on fisheries stocks and human health. Most spills in the region occur either by collisions or grounding. Ships also deliberately dump wastes of various kinds into the waters of the region causing a heavy toll on the fishes and other marine species.

Aside from the regular land and marine activities that degrade the maritime environment of Southeast Asia, there are the episodic events like sea-born natural disasters, transnational maritime crimes, terrorism and insurgency, all of which not only cause direct harm to land, water and populations but can also precipitate tension or conflict within or between states. Perhaps, the recent memory of the December 2004 Indian Ocean Tsunamis that killed well over hundred thousand people in the region<sup>7</sup> is still fresh in the minds of many reminding them not only about the unquestionable destructive power of natural disasters but also about the human inability to control them even with the latest technological means. Among the other natural disasters of oceanic origin that hit the region periodically are cyclones, storm surges, marine volcanoes etc. At present, the Southeast Asian waters have become the focal point of many oceanic crimes as well, in particular piracy and robbery at sea that have grown more violent and complex in recent times. Needless to mention, the areas around the Sulu Sea and the Strait of Malacca are the ones most notorious for acts of piracy and this is increasing since 1998. In 2003, out of 445 piracy

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<sup>7</sup> The Asian Tsunamis that hit two continents and 12 nations caused severe damage in the affected countries in terms of loss of lives, infra-structural damage, individual family loss, environmental degradation, property damage and affected fishing and agriculture. See for details, Segufta Hossain and Mohammad Ashique Rahman, "Asian Tsunami: Economic Impacts and the Politics of Humanitarian Aid", *BISS Journal*, Volume 26, No. 3, July 2005, pp.455-508.

acts at the global level, 189 took place in Southeast Asian waters.<sup>8</sup> It is now believed that piracy also has nexus with other transnational maritime crimes in the area like smuggling in contraband goods, small arms trafficking, illegal migration, terrorism and insurgency.<sup>9</sup>

Coming to South Asian maritime environment, one would notice that the region is not as maritime a region as Southeast Asia is. Nonetheless, ocean plays an important role in the political, social, economic, cultural and environmental domains of many of the littoral states. There is no gainsaying that the maritime configuration in South Asia is marked by asymmetry. With the exception of Nepal and Bhutan, the two landlocked countries, India, Pakistan and Bangladesh are the principal Indian Ocean littoral countries, while Sri Lanka and Maldives are the island states in the region. Like in the terrestrial domain, India's pre-eminence also resonates in the ocean that bears its name. Its coastline that stretches for 7000 km where it is surrounded by the Bay of Bengal in the east, the Arabian Sea in the west, and the Indian Ocean in the south, significantly roofs the northern portion of the Indian Ocean, thereby endowing the country with a significant maritime status. The only country in the region with a well-defined ocean policy, India's main maritime interests include trade and commerce, exploration and exploitation of ocean resources, and maritime security.

India has pursued an active program of exploration for manganese nodules in the Indian Ocean and has been successful in being designated a pioneer investor with respect to this area by the Preparatory Commission for the International Seabed Authority, and

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<sup>8</sup> Lieutenant John F Bradford, (US Navy), *op. cit.*, p.72.

<sup>9</sup> Several Southeast Asian guerrilla and terrorist groups possess substantial maritime capabilities. Since 2000, al-Qa'ida, the Moro Islamic Liberation Front, the Abu Sayyaf group, Jemmah Islamiyah, the Kumpulan Militan Malaysia, the Gerakan Aceh Merdeka, and Laskar Jihad have all been suspected of planning or executing maritime attacks. Other groups have used the sea to transport weapons, move forces and raise funds. Lieutenant John F Bradford, US Navy, *op. cit.*, p. 70

as such is the only Third World nation to achieve this status.<sup>10</sup> Bangladesh and Pakistan, sharing 710 km and 960 km coastlines respectively, do have similar interests in the region. The economies of Sri Lanka and the Maldives are to a great extent ocean based, with particular emphasis on fishing and coastal tourism. From a geopolitical perspective, the ocean cannot be viewed to be free from tension and conflict in as much as India's powerful navy in the region creates misapprehension and speculation in the littoral countries about India's geopolitical ambitions in the region. The Indo-Pak conflict is also reflected in the ocean domain. Pakistan, which has always opted for a near parity with India in terms of military strength, is unlikely to leave Indian naval supremacy in the Indian Ocean unchallenged in the future.

However, one finds symmetry in so far as oceanographic features, seasonal monsoons (northern portion of the Indian Ocean), flora and fauna, marine ecosystems (estuaries, mangroves and coral reefs), natural disasters, environmental management, and the patterns and spread of diseases are concerned.<sup>11</sup> When comparison is made between the marine degradation in Southeast Asia and South Asia, the difference between the two would appear to be one of degree rather than of kind. Like in Southeast Asia, in South Asia too, both land based and coastal activities of the littoral countries contribute to marine pollution for reasons like dumping of solid waste, discharge of chemicals used in agriculture, drainage from port areas, deposit of domestic and industrial effluents, construction along the coast, and tourism activities, among others. Also, discharges through outfalls and various contaminants from ships, sea-based activities, including marine transportation, offshore mineral exploration and production activities and accidental oil spills further exacerbate pollution in the ocean.<sup>12</sup> Of late, oil spills or wrecks of oil tankers at narrow

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<sup>10</sup> A K H Morshed, "Cooperation in the Maritime Zones Among and Between the SAARC Countries", *BIISS Journal*, Volume 20, No. 1, January 1999, pp.1-11.

<sup>11</sup> 'State of the Marine Environment in the South Asian Seas Region', UNEP *Regional Seas Reports and Studies*, Report No. 123, UNEP, 1990, p.7.

<sup>12</sup> Cited in *Global Environment Outlook, 1997*, available online [http://www.unep.org/geo/geo1/ch/ch3\\_14.htm](http://www.unep.org/geo/geo1/ch/ch3_14.htm), accessed 29 November 2006.

approaches to harbours and choke points in the region have become a matter of concern not only for the environmentalists but also for the mariners and security specialists.<sup>13</sup> Oil spillage from foreign ships, dumping of hazardous materials, wastes from far distant areas, etc., are few external sources of marine pollution in the region. Because of the open nature of the ocean, and continuous flow of currents, all the countries of the region feel the effects of pollution. Currently, the rich marine environment in the region, like in Southeast Asia, is subjected to great pressures due to over exploitation of marine resources. In this regard, those littorals blessed with technological advantages find the game an easy one. Another noticeable fact in the region is the rampant exploitation of mangroves for timber, fuel wood and other purposes, in particular for using large coastal areas for agricultural activities and shrimp farming.<sup>14</sup>

The South Asian marine environment is also disaster prone like that of Southeast Asia. The region is vulnerable to the assault of few disasters of oceanic origin, i.e., cyclones and storm surges. The Bay of Bengal is the breeding place of catastrophic cyclones during pre-monsoon and post-monsoon periods. These events, although episodic in nature, cause immense damage to life and property of the people, in particular those living in the coastal zones. Needless to mention, the loss of lives and properties in catastrophic cyclones is more in Bangladesh than in other South Asian littorals. The recent tsunami also had its devastating effects on the life and property of a large number of population in countries like India, Sri Lanka and Maldives. Widespread damage was done not only to life, property and infrastructures in these countries, but to several marine habitats in the region as well.<sup>15</sup>

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<sup>13</sup> Cdr. P K Ghosh, "Maritime Security Challenges in South Asia and the Indian Ocean: Response Strategies", A Paper presented at the Center for Strategic and International Studies – American-Pacific Sea Lanes Security Institute at a conference entitled 'Maritime Security in Asia', January 18-20, 2004, Honolulu, Hawaii, USA, pp.1-13.

<sup>14</sup> South Asia Cooperative Environment Programme (SACEP), available online <http://www.sacep.org/html/regional-environment.htm>, accessed 11 November 06.

<sup>15</sup> See for details, Segufta Hossain and Mohammad Ashique Rahman, *op. cit.*

The South Asian marine environment is also infested with several forms of maritime crimes as in the case of Southeast Asian marine environment. Among these, piracy is the most reported one. While most of the acts of piracy originate from the local waters, recently piracy related incidents seem to have spilled over from Strait of Malacca and South China Sea into the Bay of Bengal.<sup>16</sup> As per the 2004 annual piracy report published by the International Maritime Bureau, out of 32 attacks in South Asia, Bangladesh topped the list with 17 attacks. Indian ports witnessed 15 attacks and reportedly there were no piracy related incidents in the waters of Sri Lanka, Pakistan and Maldives.<sup>17</sup> Other activities like trafficking in small arms, drugs, and contraband goods have also entered the list of criminal activities in South Asian marine environment. Still more ominous is the presence of several terrorist organizations in and around the Indian Ocean that are known to possess merchant fleets of various types for engagement in dubious maritime trade.<sup>18</sup>

From the above discussion, it is clear that a wide spectrum of problems ranging from regional pollution, international pollution, illegal fishing, piracy, terrorism, mercenary and other activities are now common in the seas of both Southeast Asia and South Asia respectively. All such acts cause instability and disorder in both the seas in varying degrees. While degradation of the oceans continues in an unbridled manner, the fact remains that the oceans are still revealing to mankind great potentials and opportunities. They provide food, energy and water thereby sustaining the livelihoods of hundreds of millions of people. In the process, like in the terrestrial domain, a scramble for acquiring resources finds its place in the ocean medium too. The succeeding section attempts to probe into the conflicts that are likely to be generated out of such races.

### **3. Marine Degradation in Southeast Asia and Resultant Conflicts: Reflections on the Prospective Threats to South Asia**

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<sup>16</sup> Cdr. P K Ghosh, *op. cit.*, p.4.

<sup>17</sup> Dr. Vijay Sakhuja, "Sea Piracy in South Asia", *South Asia Analysis Group*, Paper No. 1259, 18 February 2005.

<sup>18</sup> Cdr. P K Ghosh, *op. cit.*, p.5.

This section of the paper attempts to focus on the conflicts likely to originate out of competition for grabbing the marine resources in Southeast Asia and then examine if a comparable situation exists in South Asian seas as well. The competition essentially flows from the nation-states' old age tendency for acquisition of territory and wealth in the pretext of their survival. The added impetus to such a race is provided somewhat by an illusion that the vast ocean space is an infinite source of food supply, a bottomless pit for waste disposal, and a 'common space' for crimes and wars. However, in view of the shrinking capacity of the world oceans to serve human-beings as and when they please, reality is soon expected to prevail over such illusions. Perhaps, there is no gainsaying that wealth, opportunity and abundance in the oceanic space are now facing scarcity, in some cases at an alarming rate thereby leading to conflicts of various types among the multiple users of ocean resources. A number of factors act as additives to such conflicts, a discussion on which would follow.

With the increase in world population, world economy and world trade, there has been a corresponding increase in the demand for marine and coastal resources. According to the World Resources Institute, at least two thirds of the planet's human population lives close to the coastline, the number is expected to reach three quarters by 2025.<sup>19</sup> Not surprisingly, scramble for coastal and marine space and resources by different stakeholders would, in the future, be a potential cause of conflict and friction not only between the individuals but as well between the littoral States.

With the growth of world population and the resulting pressure on terrestrial resources, there is the speculation that pressure on marine and coastal resources would be mounting in the coming decades, thereby leaving the coastal states in a vicious circle of 'scarcity'. Doubt and suspicion loom large as to what extent the current trends towards globalization, unfettered liberalization, open markets, consumption pattern a *l'occidentale*, etc. would address this problem of true scarcity of resources. Dismaying may be the fact that the current world-wide structure of property rights, taxes and subsidies has

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<sup>19</sup> John Temple Swing, 'What Future for the Oceans?', *Foreign Affairs*, Volume 82, No. 5, September/October 2003, pp.139-152.

encouraged over use of coastal and marine resources thereby placing such resources under intolerable stress.<sup>20</sup>

While as per the United Nations Convention on Law of the Sea (UNCLOS), the maritime jurisdiction is well defined for a coastal state, the fact should be borne in mind that the sovereignty as prescribed for the Exclusive Economic Zone (EEZ) is not absolutist or territorial in nature. It is what as Harold Laski termed, 'shared or pluralistic sovereignty'. Hence the sovereignty in the EEZ moves from a territorial one to a functional one where all states enjoy navigation and over-flight rights plus the adjacent coastal states, landlocked and geographically disadvantaged states enjoying exclusive rights with respect to certain resources and economic activities, such as exploitation of living and non-living resources in the zone.<sup>21</sup> In the circumstances, conflict over various marine resources would in all likelihood, be an inevitable phenomenon in the future unless the nation-states come out of their pathological obsession with the Westphalian concept of sovereignty (as understood in strict territorial terms) and ownership in classical economic sense.

Maintaining and extending the beneficial uses of oceans on the principle of equity is a goal that enjoys widespread support and is accorded a high priority. The Common Heritage of Mankind as established by UNCLOS is a pointer to the fact.<sup>22</sup> However, the possibility of conflict looms large in this segment of the ocean as the rich and the powerful nations with financial, military and technological prowess are likely to exploit the region's resources

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<sup>20</sup> Mario Soares, *op. cit.*, p.98.

<sup>21</sup> The Exclusive Economic Zone is an advanced example of a functional regime. See for details, Elisabeth Mann Borgese, *The Oceanic Circle: Governing the Seas as a Global Resource*, United Nations University Press, New York, 1998, p.119.

<sup>22</sup> As embodied in the UN Convention on the Law of the Sea (1982), the concept of common heritage has a few implications like nonappropriability, equity, peace and development. See for details, Elisabeth Mann Borgese, *The Future of the Oceans: A Report to the Club of Rome*, Harvest House, Montreal, 1986, pp.43-44.

depriving, thereby, a vast majority of the world's poor coastal states.<sup>23</sup> A great divide between the rich and the poor against the ethos of equity is likely to generate conflict in the ocean medium as in the terrestrial domain.

Scramble for strategic resources like oil and gas may in future turn itself into a conflict in the ocean domain alongside the overexploitation of fishes. It may be mentioned that 30% of the world oil and 50% of its natural gas now come from off-shore production. Over the past 20 years, underwater oil production has risen by 37% to 186,000 million barrels a day and that of gas by 27% to 35,900 million cubic feet a day. With improvement in marine science and technology, and more knowledge in oceanography, new fields are constantly being discovered, and with improving recovery methods and an increasing ability to move further from the shore, that growth in production will soon exceed 50%.<sup>24</sup> The energy hungry developed, developing and the underdeveloped countries would, therefore, compete for access to such resources creating in the process regional and international conflicts.

The conflict over marine resources may also take a critical turn if maritime boundaries between the coastal states are not properly demarcated or delimited. It may be mentioned that although UNCLOS clearly determines the precise limits of various maritime zones, it fails to agree on any single universal set of principles by which these boundaries are to be delimited. Consequently, the process of delimitation and subsequent demarcation of maritime boundaries continues to remain in dispute.<sup>25</sup> If left to fester, these conflicts are likely to further heighten tensions and could even result in military confrontation. Such conflicts are also conceived with the possibility of extra-regional involvement. It needs to be mentioned that dispute over

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<sup>23</sup> '...Until recently the economic potential of the oceans was considered only in terms of their biological riches – fish, whales, seaweeds, etc – as well as their importance as a means of communication from one land mass to the others. Now this potential has been extended to other dimensions. See for details, Elisabeth Mann Borgese, *ibid.*, p.xx.

<sup>24</sup> John Temple Swing, *op. cit.*, p.145.

<sup>25</sup> Rahul Roy-Chadudhury, 'Trends in Delimitation of India's Maritime Boundaries', available online <http://www.ciaonet.org/olj/sa-99ror01.html>, accessed 11 November 2006.

maritime boundary reflects the classic case of a nation-state's penchant for guarding its sovereign rights to the last limit.

From the above discussion, it is evident that the conflict in the ocean medium is essentially over its resources, both living and non-living. The levels at which it occurs are national, regional and inter-regional. At the national level, the theatre of conflict is the coastal zone and inter-tidal zone. At the regional level, the stage of conflict is in the EEZ and beyond. It is also the zone where inter-regional maritime conflicts manifest themselves in different shapes. These three levels of conflict find their practical manifestation in both Southeast and South Asian marine environments, and the difference between the conflicts in the stated environments is not one of kind, but of degree. Let us take the case of Southeast Asia first.

Looking at the Southeast Asian maritime conflicts, in particular over fishery,<sup>26</sup> one would notice that at the national level, it attains a very critical dimension due to widespread practice of aquaculture. Although, aquaculture is often seen as a panacea for diminished stocks, lost access to fisheries, and the resultant loss of food and cheap animal protein, the anticipated benefits have not materialized due to conflict between the stakeholders. At the national level, besides aquaculture, the conflict originates due to conflicting claims over fish resources by the fishermen, both traditional and modern.<sup>27</sup> The rapid introduction of sophisticated fishing technology by private or state-controlled companies has seriously disrupted the traditional organization of small-scale fishermen. The construction of small

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<sup>26</sup> Fisheries contribute only a few percent or less of GNP of the ASEAN countries, but about 65% of the animal protein is consumed in Indonesia, Malaysia and the Philippines and more than 2 million persons are employed in fisheries (excluding secondary employment). Further, ASEAN countries export more than US\$1 billion worth of fish and have an annual potential product of over US\$5 billion. More important, rural coastal people in Southeast Asia depend on fish for nutrition, employment and their way of life.

<sup>27</sup> Mark J Valencia, "International Conflict over Marine Resources in Southeast Asia: Trends in Politicization and Militarization", available online <http://www.unu.edu/unpress/unubooks/80a04e/80A04E0a.htm>, accessed 01 November 06.

trawlers has intensified the pressure on coastal stocks and small scale fishing has been neglected in development plans which focus on full-time fishermen. Although policy makers in these countries are beginning to become more sensitive to the plight of small scale fishermen, laws prohibiting the use of trawlers close to the coast have not been effectively enforced. The over exploitation of stocks continue to threaten job opportunities for fishermen. In Southeast Asian seas, the use of destructive means of fishing like explosives, poisons, fine mesh nets etc. not only affects the fish habitat adversely but also pollutes the marine environment causing a threat to several marine species including the coral reefs.

In Southeast Asia, conflict over fishery at the regional level also attains a critical dimension as extended maritime jurisdictional claims overlap. Some of the overlapping areas are between Philippines-Indonesia, Malaysia-Thailand, Malaysia-Indonesia, Malaysia-Philippines, Thailand-Vietnam, Thailand-Vietnam-Kampuchea, etc. The search for fish for export and domestic use by distant-water fishers produces such conflicts among the littoral states. Numerous enforcement actions have resulted in the seizure of fishing vessels, and many of these incidents have been accompanied by gunfire. For example, Thailand's concern is directed towards protecting its own fishing fleet which has been exposed to armed attack and seizure by Kampuchea, Vietnam, Myanmar and now Malaysia. In Southeast Asian seas, poaching by the distant fishing countries is rare in view of the fact that several countries have entered into joint venture agreements with Japan, South Korea and Taiwan. Nonetheless, illegal fishing is sometimes carried out in Southeast Asian seas by South Korea and Taiwan.<sup>28</sup>

Conflict over oil and gas also marks the maritime environment of Southeast Asia. Extended maritime jurisdiction encompasses many sedimentary basins having hydrocarbon potential. Much of the resources are speculative and not yet proven, yet all the regional countries are looking forward to exploit them to their best advantage. This is because, practically all the Southeast Asian countries are facing increasing energy demands, decreasing energy supplies and a greater

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<sup>28</sup> *Ibid.*



reliance on foreign aid for new sources of energy production. Also the expanded use of natural gas and its more realistic pricing as a premium fuel are factors encouraging companies and governments to explore for additional gas reserves. For many countries, the potential is worth several times their annual GNPs.<sup>29</sup> Indonesia, Malaysia, Brunei, Thailand and Philippines are the only countries with established offshore hydrocarbon potential. Potential hydrocarbon bearing areas with multiple claimants include the northern Andaman sea (India and Myanmar), the eastern Gulf of Thailand (Vietnam, Thailand and Kampuchea), the south-western Gulf of Thailand (Malaysia, Thailand and Vietnam), the area north, west and east of Natuna (Vietnam, Indonesia, Malaysia and China), offshore Brunei (Brunei, Malaysia, China and Vietnam), the Gulf of Tokin (China and Vietnam), the Dangerous Ground (Malaysia, Vietnam, the Philippines and China), and the north-eastern South China Sea (China and Taiwan). It may be mentioned that the disputed area offshore from Brunei and that in the Arafura Sea may contain up to US\$2.65 trillion and US\$1.5 trillion worth of oil and gas respectively. The disputed basins in the eastern Gulf of Thailand may contain US\$40 billion to US\$400 billion worth of oil and gas. And the Natuna area may contain US\$250 billion worth of gas and oil. In the circumstances, it is no wonder that the various countries would remain adamant about their claims to and interests in the areas, thereby engendering conflicts between them.<sup>30</sup>

Lastly, a potential trigger for conflicts in the region is territorial disputes between states. As mentioned earlier, the geography of the political entities in Southeast Asia is remarkably maritime, and that with the extension of jurisdiction, this geography presupposes territorial conflicts and possibly explosive resource inequities.<sup>31</sup> Several countries in the region have gained enormous marine areas with extended jurisdiction. In particular, the largest of these gains were made by Indonesia, the Philippines, China and Vietnam, whereas the shelf-locked Kampuchea, Brunei, Singapore and Thailand and land-locked Laos are the unfortunate ones in this regard. In many instances, the demarcation of maritime boundaries has not been to the

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

<sup>30</sup> *Ibid.*

<sup>31</sup> *Ibid.*

satisfaction of the littorals. As a result, 'territorial disputes, most of them maritime in nature and involving conflicting claims to either islands or littoral waters, contribute to interstate tension in Southeast Asia'.<sup>32</sup> Among the serious disputes, the Philippine claims to Sabah, overlapping claims to exclusive economic zones, and multilateral disputes over islands and waters in the South China Sea draw one's rapt attention.<sup>33</sup> One such issue was seemingly resolved in 2002 when the International Court of Justice (ICJ) ruled in favour of Malaysia with regard to the conflicting claims by Malaysia and Indonesia to the sovereignty over Sipadan and Litigan islands.<sup>34</sup> In a similar fashion, Malaysia and Singapore have submitted to the ICJ for arbitration a dispute regarding sovereignty over Pedra Blanca (Pulau Batu Puteh), an island in the Singapore Strait with an important aid to navigation that is passed by about fifty thousand ships every year.<sup>35</sup>

However, the most serious disputes are those in the South China Sea where Indonesia, Brunei, Philippines, Vietnam, China and Taiwan assert conflicting claims to sea and island territories.<sup>36</sup> 'Control of the area has important implications for free passage of shipping and the eventual development of oil and natural gas investments are unlikely to be made until the sovereignty issues are settled'.<sup>37</sup> As a result, in recent times, the claimants have clashed violently and the possibility of renewed fighting (short of open warfare) clearly exists. The current situation is 'volatile and could through an unexpected political or military event, deteriorate into open conflict'.

Coming to the conflict scenario in South Asian marine environment over its resources, one would notice a pattern similar to the one as observed in case of Southeast Asia *albeit* with a variation in its intensity. Few reasons explain the fact. *First*, as mentioned above,

<sup>32</sup> Lieutenant John F Bradford (US Navy), *op. cit.*, p.70.

<sup>33</sup> *Ibid.*

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

<sup>35</sup> *Ibid.*

<sup>36</sup> *Ibid.*

<sup>37</sup> See for details, Baladas Ghosal, "ASEAN and South China Sea Imbroglia: A Fresh Look at its Approach to Conflict Management", in Kamarulzaman Askandar, *Management and Resolution of Inter-State Conflicts in Southeast Asia*, South Asian Conflict Studies Network, Malaysia, 2003, pp.91-109.

due to asymmetric maritime configuration of the region, the vigorous maritime activities of India, backed by the country's superior marine technology, are in no way comparable with those of Bangladesh and Pakistan. In the region, two land-locked countries, Nepal and Bhutan, practically remain devoid of maritime activities, whereas the maritime activities of the two insular countries, Sri Lanka and the Maldives, remain much below the standard level due to lack of marine technology in harnessing the ocean resources. *Second*, the oceanic location of the littorals is such that the water bodies separating them are not congested as in the case of Southeast Asia. Their separation from each other by the vast expanse of water somehow provides them with sufficient oceanic space to carry out their respective maritime activities without much obstacles. *Third*, disputes over demarcation of maritime boundaries in South Asian marine environment are not that pronounced as in the case of Southeast Asia. Perhaps, the only and the most troublesome dispute that exists in the region is one between Bangladesh and India. The former also shares maritime boundary dispute with Myanmar.

However, despite an apparent calmness in South Asian marine environment, the ocean does not fail to breed conflict in the region. Like in case of Southeast Asia, such conflicts too manifest themselves at three levels – national, regional and inter-regional. At the national level, it is perhaps in the realm of marine fisheries that conflict seems to be more apparent, and this is essentially an outcome of technological polarization. That technological polarization leads to conflict between the fishermen of a coastal state is now a well known fact. As one analyst remarks, “this is indeed the most visible aspect of marine conflict which at the moment seems to be the one which engages the concerns of the policy makers and the energies of the fishermen”.<sup>38</sup> Conflicts between fishermen using different levels of technology can be analyzed with respect to conflict over space and conflict over produce or both.<sup>39</sup>

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<sup>38</sup> Fisheries and Conflicts at Sea, available online <http://www.unu.edu/unupress/unubooks/80a03e/80A03E00.htm>, accessed 08 August 05

<sup>39</sup> *Ibid.*

Another dimension of conflict over marine fishing is the violation of national jurisdiction in pursuit of fishes. It is often said that fish tend not to respect the maritime boundaries fixed by nation states, and fishermen in pursuit of fish seem to follow the suit. Thus, a long known conflict in the domain of marine fisheries is that between contiguous coastal states. The difficulty in demarcating national boundaries in the territorial seas is the primary cause for this conflict. An equally important factor in the South Asian seas is the lack of navigational devices on fishing vessels which can forewarn fishermen of such trespass. While cases of trespass into another nation's waters may be unintentional, they often lead to rather adverse situations sometimes necessitating the use of naval forces. In South Asian context, the Indo-Pak conflict, the Tamil crisis in Sri Lanka involving India, the un-demarcated maritime boundaries between India and Bangladesh, and between Bangladesh and Myanmar, conflicting claims of India and Bangladesh over few newly formed islands in the Bay of Bengal, all have adverse effects on fishermen fishing near the maritime boundaries of their nations.<sup>40</sup> It should be mentioned that illegal fishing and poaching in the Bangladesh coastal waters is almost a regular phenomenon due to intrusion of foreign fishermen into Bangladesh territorial waters mostly from countries like India, Myanmar and Sri Lanka to catch fish with mechanized trawlers and boats.<sup>41</sup>

The South Asian coastal states have also been the victims of poaching in their maritime waters due to the illegal entry of distant water fleets from Japan, Thailand, South Korea and Taiwan. While the frequency of such incidents was more prior to the extension of EEZ to 200 nm by countries of the region,<sup>42</sup> the possibility of poaching from distant countries still exists. This is because many operations have entered into license agreements, among which a large number take undue advantage of the lack of legal measures and policing facilities at

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<sup>40</sup> *Ibid.*

<sup>41</sup> National News – News from Bangladesh, available online <http://bangladesh-web.com/news/jan/01/n01012003.htm>, accessed 02 April 2003

<sup>42</sup> The declaration of EEZ by Bangladesh was made in 1974, by Pakistan in 1976, by India in 1977 and by Sri Lanka in 1977.

the disposal of the countries of the region. Illegal fishing, therefore, continues unabated and the major culprits have been apprehended by the coast guards of all the countries. So intense has been the menace that Pakistan government had to enact a law that would confiscate any poaching vessel with a fine of US\$720,000 and a five year jail sentence for the captain.<sup>43</sup>

Scramble for off-shore oil and gas, a non-renewable marine resource, also bears potentialities for conflicts in the South Asian seas. In particular, the aggressive manner in which India is pursuing its oil policy unnerves its neighbours to a great extent. It may be mentioned that India with its one billion inhabitants and limited energy resources is now desperately looking for exploration of off-shore oils in the Bay of Bengal. Meanwhile, a plan to go for a joint Indo-Myanmar oil venture in the Bay of Bengal is underway. Encouraged by gas discoveries in the Bay of Bengal basin by India and Myanmar, Bangladesh is also planning to offer offshore blocks to some multinational oil companies. Recently, media in Bangladesh has reported that India's attempts at maritime oil and gas exploration overlap with two of Bangladesh's oil blocks.<sup>44</sup> The Government of the Democratic Republic of Sri Lanka has equally decided to renew the search for oil and gas prospects in its offshore areas bordering India. Competition for oil and gas is imminent in the region with the potentialities for conflicts in particular between Bangladesh and Myanmar, India and Bangladesh. This is because Bangladesh's maritime boundaries with both India and Myanmar are not yet demarcated.

The above discussion brings home the point that the marine environments of both Southeast Asia and South Asia are now degraded to such an extent that environmental damage, resource depletion and traditional threats arising out of it may threaten peace, stability and order in both the regions with serious consequences for the littorals. While such threats are more pronounced in case of Southeast Asia due to the region's predominant maritime nature,

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<sup>43</sup> Fisheries and Conflicts at Sea, *op. cit.*

<sup>44</sup> See for details, Dr. Anand Kumar, "Oil Poaching Controversy in Bay of Bengal", *South Asia Analysis Group*, Paper No. 1877, 14 July 2006.

intensive oceanic activities, numerous maritime disputes, etc., the replication of a similar scenario in South Asian marine environment is a possibility that can not be ruled out altogether. As a theatre of various low intensity maritime conflicts, Southeast Asia now remains under direct threat to oceanic peace and stability, and hence to the national security of the region's coastal states. A conspectus of such threats is presented below before going to the succeeding section that deals with the region's multifarious efforts to address them.

*Firstly*, land-based activities like dumping of sewage, toxins, pesticides, extremely hazardous wastes, heavy metal and radioactive residues, discarded plastics, etc. are leading to the destruction and alternation of marine habitats, loss of fisheries, health hazards, increasing eutrophication and changes to hydrology and the flow of sediments. All such activities are now being considered as falling within the category of 'eco-terrorism' and are considered not only as crimes against ecology but also against humanity. While environmental degradation is unlikely to be the cause of direct military confrontation in the region, it nonetheless poses a threat by undermining international relationships, economic development and social welfare. For example, the destruction of coral reefs and over exploitation of fishing groups are contributing to Indonesian poverty and exacerbating domestic violence.<sup>45</sup>

*Secondly*, decrease in fish stocks due to overexploitation and conflicting claims over maritime fishing zones has made illegal fishing a regular phenomenon in Southeast Asian waters. This is ominous enough to disturb order and peace in the area. It is now widely known how at the interstate level, rapid depletion of fisheries has contributed to tension between Thailand and Malaysia, and between Thailand and Myanmar. Huge hydrocarbon resources would also be a central factor in the strategic calculus of the regional countries. In this respect, those who possess the biggest and best technologies will try to extract not only fish, seal, whales but also to exploit oil, energy and other mineral resources. Such pillage which is euphemistically termed as 'modern piracy' has far reaching implications for political security, and hence for the national security of the coastal states.

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<sup>45</sup> Lieutenant John F Bradford, (US Navy), *op. cit.*, p.73.

*Thirdly*, following globalization, the opening of trade frontiers among and between the nations in the terrestrial domain multinationalized the shipping world and the complexity of the sea-lane eventually arose due to borderless nature of economic activities across seas and oceans. In the process, the increasing economic activities across the seas and waters of Southeast Asia coupled with sophisticated communication technology has resulted in certain new kinds of threats in the ocean medium. While the region, as mentioned earlier, is notorious for various kinds of piracy acts, other activities like illegal trade in arms, prohibited drugs, protected animals and plant species, toxic materials and nuclear wastes, movement of terrorist groups<sup>46</sup>, etc., are regular in Southeast Asian waters. These events, both regular and episodic in nature, have the potentialities to destabilize oceanic peace and order in the region. This is corroborated by events like the insurgency movements in the Filipino island of Mindanao where the separatist movement under the aegis of Moro Islamic Liberation Front (MILF), Autonomous Region of Muslim Mindanao (ARMM) and the Abu Sayyaf are being continually armed from sources, presumably the Middle East, to fight the regular army of the government.<sup>47</sup>

*Fourthly*, as mentioned earlier, all the coastal countries in Southeast Asia, thanks to UNCLOS, have extended their maritime jurisdiction, leaving area winners and losers, and many claims to maritime areas overlap. This problem of overlapping claim can only be overcome if maritime boundaries are properly demarcated. This, however, is a complex and multi-faceted issue involving political, technical and legal aspects. It is calculated that currently the

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<sup>46</sup> The following terrorist groups in Southeast Asia have the ability to maneuver at sea: (i) Indonesia-based Free Aceh Movement/Gerakan Aceh Merdeka (GAM/Aceh Sumatra National Liberation Front (ASNLF)); (ii) Indonesia-based Free Papua Movement/Organisasi Papua Merdeka (OPM); (iii) Malaysia backed Kumpulan Mujahideen Malaysia (KMM); (iv) Philippine based Moro Islamic Liberation Front (MILF) and (v) Philippine based Abu Sayyaf Group (ASG). Cited in Kazumine Akimoto, "Maritime Terrorism and the Role of the Navy: A Sinister Shadow Lurking in the Sea Lane", *Journal of Indian Ocean Studies*, Vol. 12, No. 3, December 2004, pp.383-389.

<sup>47</sup> *Asia Times*, Southeast Asia, June 10, 2002.

overlapping maritime zones of states give rise to the need for delimiting nearly 400 disputed boundaries in the world of which only a little over one-third have so far been agreed.<sup>48</sup> The coastal states of Southeast Asia are becoming increasingly aware about the gains likely to be accrued from marine resources and as a result, they are now engaged in efforts to identify and pursue their national development interests in the ocean arena. In such a race for acquiring the marine resources, disputes over maritime boundaries may generate tension and mistrust in the bilateral and intra-regional relations between the littorals of the region. In effect, the current situation in the region is 'volatile and could, through an unexpected political or military event, deteriorate into open conflict'.<sup>49</sup>

*Finally*, although as per UNCLOS, the world's oceans and seas have been declared as the spaces to be used only for peaceful purposes, the fact remains that power rivalries among the major world powers find its resonance in the ocean medium also. While such rivalry is different from the one as existed during the Cold War time, all extra-regional powers are interested in Southeast Asia's oil resources and protection of the strategic oil routes that traverse the region. The region is also of strategic importance for the future ambitious powers. One in particular must not remain oblivious of the fact that the Southeast Asian region is a nexus of maritime routes used by the navies of the extra-regional great powers. In the region, a few strategic straits abound, and with extension of jurisdiction, many fall within the territorial or arch-pelagic waters of the regional states. Competition and rivalry between the extra-regional great powers for access to these straits will be an integral part of the *realpolitik* here for the foreseeable future. In this connection, any divergence of interests among the interested external powers may aggravate tension in the region leading to conflicts both regional and international in nature. It may be mentioned that extension of jurisdiction in the region has, in effect, opened a Pandora's Box of continued uneven growth, volatile mixture of competition, nationalism and militarization. In a complex situation like this, the countries of Southeast Asia that have increased

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<sup>48</sup> See for details, Mr. Habibur Rahman, "The Law of the Sea and Settlement of Maritime Disputes", *BISS Journal*, Volume 15, No. 1, 1984, pp.69-96.

<sup>49</sup> Lieutenant John F Bradford, (US Navy), *op. cit.*, p.70.

technological and market dependence on the developed countries would, in all likelihood, oppose any superpower or outside power's involvement in the region for exclusive security reasons.

It is, therefore, obvious that the maritime challenges for Southeast Asia are gargantuan in nature. So much so that most analysts now feel that Southeast Asia creates an environment that would be conducive to addressing their traditional and non-traditional maritime concerns such as inappropriate management of ocean resources, environmental pollution, increasing maritime crimes, etc. In effect, all such challenges must be addressed on a multi-layered basis. While a unilateral approach to meet the threats arising at the national level can sometimes be effective, more arduous would be the task to confront the threats at the regional and intra-regional levels as sovereign sensitivities are traditionally extremely high among the Southeast Asian states. The relevant question is: what then is the current trajectory of cooperative efforts in the region to address its myriads of oceanic challenges? The succeeding section is an endeavour to address this pertinent question.

#### **4. Management of Marine Environment in Southeast and South Asia: Strategies for Prospective Cooperation**

Despite myriads of threats that one observes in case of Southeast Asian marine environment, cooperation among the littorals of the region in mitigating them still remains inadequate. Lieutenant F Bradford has quite keenly discerned few factors behind this, like, sovereignty sensitivities, extra-regional power rivalries and interests, inter-state relations in the region characterized by conflicting interests, contrasting populations, nationalistic tendencies and histories of warfare, and finally lack of resources.<sup>50</sup>

Notwithstanding the above mentioned constraints, some sort of oceanic regionalism is in sight in the region, in particular in the non-controversial domain of marine pollution. Currently, the developing countries in the region have started to provide provisions concerning the control of marine pollution with special emphasis on land-based marine pollution in their respective legislation in either a general or a

<sup>50</sup> See for details, Lieutenant John F Bradford (US Navy), *op. cit.*, pp.73-78.

specific way. In this respect, the Southeast Asian countries are borrowing the appropriate ideas, methods and operational systems worked out by the Baltic states, the US and Japan with suitable modification and adaptation in consonance with local customs, traditions and social-economic peculiarities.<sup>51</sup> A very positive step in this direction is that ASEAN, the regional organization of the area, has committed more and more of the resources of its member states to prevent and mitigate environmental degradation, and coastal and marine pollution. The measures taken include pollution control, environmental-impact studies, national and regional legislation to prevent and respond to potential oil spills, and participation in various international conventions on the protection of coastal and marine environments.

To the side of its involvement in controlling marine pollution, ASEAN's other tangible activities are manifested in some of its important marine bodies. The ASEAN Committee on Science and Technology (COST) Subcommittee on Marine Science has explored the possibility of a cooperative approach to extra-regional access to marine scientific research and has approached the European Community (EC) and the US for assistance in funding cooperative marine scientific research.<sup>52</sup> COST has given birth to an informal committee on pollution and an ASEAN Sub-regional Environment Program. The ASEAN Committee on Petroleum (ASCOPE) has, within its terms of reference, the development of sub-regional contingency plans for oil spills. ASCOPE has also been discussing standardization of environmental and safety regulations concerning offshore oil exploration.<sup>53</sup> Also noteworthy is the inclusion of UNEP (United Nations Environment Programme) activities into ASEAN. The UNEP has supported a number of actions related to coastal and marine environment in Southeast Asia, for example, some activities under the

<sup>51</sup> Tong Cai, "Control of Land-based Marine Pollution in Southeast Asia: A Legal Perspective", available online [www.library.ubc.ca/law/abstracts/cai.html](http://www.library.ubc.ca/law/abstracts/cai.html), accessed 08 November 06.

<sup>52</sup> Mark J. Valencia, "Regional Maritime Regime Building: Prospects in Northeast and Southeast Asia", *Ocean Development and International Law*, 31:223-247, 2000, p.238.

<sup>53</sup> *Ibid.*

Regional Programme on East Asian Seas are concentrated in the ASEAN region. The UNEP implementing counterparts in ASEAN are COBSEA (Coordinating Body of Southeast Asian Seas) and AEGE (ASEAN Expert Group on Environment), which has since been elevated to become ASOEN (ASEAN Senior Officials on Environment).

Given the fact that most of the countries in Southeast Asia are developing, they are eligible for both multilateral and bilateral aid. In this respect, the region is presently fortunate enough in getting extra-regional funding to finance many of its maritime projects. As an example, the 'Green Fund' (properly called the Global Environment Facility (GEF), a World Bank/UNDP/UNEP programme is being tapped in the region. There are also several marine relevant international organizations in the region such as the Indo-Pacific Fisheries Commission, the Southeast Asia Fisheries Development Center, the International Center for Living Aquatic Resource Management, the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, and the Working Group for the Western Pacific of the Intergovernmental Oceanographic Commission.<sup>54</sup> It may be mentioned that these organizations are not indigenously derived or funded and that their membership includes extra-ASEAN and Southeast Asian states, however, they may serve as models, platforms, or stimuli for indigenously initiated marine regional arrangements.<sup>55</sup> Also, several specialized United Nations agencies with relevance to marine problems have their respective offices in the region, all of which support national projects and bilateral assistance programs in the marine sphere. Such activities help to stimulate and support national marine awareness in the region.

Perhaps, a watershed development in Southeast Asia with respect to protection of marine environment is the cooperation between the regional countries, and between them and few extra-regional powers in combating various kinds of non-traditional threats, in particular

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<sup>54</sup> J C Marr, "Fishery and Resource Management in Southeast Asia", Paper No. 7, cited in Mark J Valencia, "Regional Maritime Regional Building: Prospects in Northeast and Southeast Asia", *op. cit.*, p.238.

<sup>55</sup> Mark J Valencia, "Regional Maritime Regime Building: Prospects in Northeast and Southeast Asia", *op. cit.*

oceanic crimes of various types. While the list of such cooperative ventures is a long one, mention may be made about few. On a bilateral basis, there is a growing military cooperation among the ASEAN members. The military cooperation between Indonesia and Malaysia, Indonesia and Philippines, Thailand and Malaysia enables the regional countries in patrolling their sea areas and conducting joint naval surveillance. On the other hand, while maritime cooperation in Southeast Asia has been historically limited by extra-regional rivalries, at present these powers are showing increasing interests in maritime cooperation with littorals of the region for protecting navigation in strategic sea lanes from transnational threats. Most important among these powers are the US, Japan and China. Australia and India, two large countries with substantial navies and interests in the Indian Ocean have also demonstrated commitment to maritime security cooperation in Southeast Asia. 'This convergence of interests not only removes inhibitors previously at play but also encourages new cooperation'.<sup>56</sup> In this connection, the joint US-ASEAN workshop on 'Enhancing Maritime Anti-Piracy and Counter Terrorism Cooperation in the ASEAN region', 2004, is a glaring example to demonstrate the American commitment to and enthusiasm for maritime security in the region. The Council for Security Cooperation in the Asia Pacific Maritime Cooperation Working Group (CSCAP-MCWG), the Asia-Pacific Economic Cooperation (APEC) Working Group on Maritime Security, the Western Pacific Naval Symposium (WPNS) and the ASEAN Regional Forum (ARF) Maritime Focus Group Force are few agencies that testify to the blossoming of maritime confidence and security building measures in the region.<sup>57</sup>

In brief, the structural, economic and normative changes in Southeast Asian polity in recent times have given the regional countries unprecedented opportunities for maritime cooperation at the levels, bilateral, regional and global. While at each of these levels, the perceived benefits may not have been to the expectation of the participants, cooperation, despite many constraints, will continue between them and will grow incrementally. The relevant question now is: what lessons can South Asia learn from these developments?

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<sup>56</sup> Lieutenant John F Bradford, *op. cit.*, p.76.

<sup>57</sup> *Ibid.*, p.78.

In contrast to oceanic regionalism in Southeast Asia, the same in case of South Asia did not make any headway due to mistrust, tension and hostility between and among the South Asian nations caused by a number of regional disputes. This is explained by the failure of the United Nations Environment Program (UNEP) in establishing any Regional Seas Programme in the region during the 1970s and 1980s,<sup>58</sup> notwithstanding the fact that the protection of the marine environment was given priority in conjunction with the overall environmental policies of countries like Bangladesh, India, Maldives, Sri Lanka and Pakistan. While it is true that oceanic regionalism in South Asia is reflected in such initiatives as the Bay of Bengal Programme (1979), Indian Ocean Marine Affairs Cooperation (IOMAC, 1990) or the Indian Ocean Rim Initiative (1995), the question remains as to their actual nature and functions as regional organizations. As a fisheries organization under the FAO, the Bay of Bengal Programme with member countries on both sides of the Bay, mostly concentrated on projects, studies and surveys related to coastal fisheries, and towards this end, successes are credited to the organizations as well. However, in the realm of maritime cooperation, fisheries are just one of the sectors in the overall maritime environment. This realization probably has driven the FAO to concentrate on environment and sustainable development in the third phase that began in 1996. At least, for regionalism in the area, the lesson learned from the Bay of Bengal Programme is that the regional states, if backed by political commitment, can act jointly to preserve their common resources. It is, indeed, a paradox that very little is talked or known about the current UNEP sponsored South Asian Regional Seas Programme despite the fact that its functioning is more effective than the one observed in case of SAARC. The Programme works through an Action Plan called the South Asian Seas Action Plan, adopted in 1995 with unqualified support of the region's five countries. Its objective is to protect and

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<sup>58</sup> Report of the Workshop on 'Implementation of GPA for the Protection of the Marine Environment from Land Based Activities in South Asian Seas Region (UNEP, 23 October 1997), p.19.

manage the marine environment and eco-systems of the region in an environmentally sound and sustainable manner.<sup>59</sup>

The current Regional Seas Programme is somewhat an indication of the South Asian nations' willingness to cooperate in the marine domain and substantial efforts have been rendered to place maritime agenda under the aegis of SAARC. If one recalls, Bangladesh, the architect of SAARC, once came out with the proposal to establish a Centre for Maritime Cooperation. In this spirit, efforts can be expanded to explore the possibility of undertaking maritime issues under SAARC at least to deal with the non-controversial and non-political issues like protection of marine environment from pollution. South Asia also presents a bleak picture with respect to joint efforts between the littorals for curbing various maritime crimes that are present in its waters. Once again, mistrust and tension between the regional countries as visible in the land explains the absence of joint venture, joint surveillance and monitoring activities among the states in the region.

While the policies required for effective management of marine environment will vary among countries, contemporary ocean management suggests a common framework that is applicable in all cases of marine management. At the outset, an appropriate study of the threats to the marine environment becomes an indispensable imperative for all those countries that are littorals to oceans and seas. Such threats are best known at the national level. The foremost task, therefore, would be to raise public and political awareness about oceans and bring more transparency in oceanic affairs. Progress in the area, as the Report of the Independent World Commission on the oceans remarks is contingent upon the creation of arrangements which ensure that information and knowledge are freely available for public discussions on the future of the oceans. It is a part of the intergenerational responsibility to transmit this knowledge to children and young people, so as to enable them to appreciate the vital importance of the oceans, the values they represent and the risks they face.

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<sup>59</sup> *South Asian Regional Seas Programme: Present Status of the Implementation of Actions and Conventions*, UNEP, 01 December 2000.

Once the nation's awareness is grown, there is the need to formulate an ocean policy. Needless to mention, in contemporary ocean governance, the ocean policy of a coastal state is deemed necessary for identifying the various issues of ocean governance for the state like marine resource exploitation, management of marine transportation, control of marine pollution control, coastal management etc. An ocean policy, in effect, reflects a country's priority that it accords to its maritime domain. This priority is, however, low in most of the coastal states. As Elisabeth Mann Borgese, an internationally reputed expert on ocean affairs and laws, remarks, "In the majority of countries, ocean affairs do not represent a central concern but a matter subsidiary to other activities having higher priority. Thus, its political stature is generally low, which translates into the location of the activity at a low level within the governmental hierarchy as well as into certain patterns of resource allocation (limited personnel and low level of spending)".<sup>60</sup> Once the ocean policy is formulated, it is expected to generate interests among all about ocean and activities related to it. In this respect, systematic efforts should be made to develop ocean science and technology for translating the potential of the ocean into the satisfaction of national needs. New knowledge of multidisciplinary nature should also be developed in order to deal with all oceanic activities with consideration to social, economic and environmental factors.

After national awareness and a subsequent ocean policy as tangible manifestation of such awareness, there comes the question of management. One should bear in mind that effective management is key to maintaining healthy marine environment which is currently inadequate in Southeast Asia and poorly present in South Asia. Such management should take due cognizance of two essential factors: first, "the problems of the ocean space are closely interrelated and need to be considered as a whole",<sup>61</sup> and secondly, ocean management is holistic in nature involving activities not only by the bureaucrats but by different sectors, organizations, NGOs, and relevant stakeholders at

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<sup>60</sup> Elisabeth Mann Borgese, *Ocean Governance and the United Nations*, Center for Foreign Policy Studies, Dalhousie University, Halifax, Nova Scotia, Canada, 1996, p.152.

<sup>61</sup> UNCLOS (Preamble).

the local, regional and global levels. Basing on this philosophy, the current ocean management envisages integrated coastal zone management, regional maritime cooperation, intra-regional cooperation and global co-operation. The paper does not intend to go into a detailed discussion of all these concepts except to highlight on regional cooperation in the marine domain. Needless to mention, in contemporary ocean governance, regional cooperation is now considered as an effective means of managing ocean affairs as it (i) allows for a more accurate assessment of trans-boundary problems, as well as for an appropriate identification of priorities for action; (ii) strengthens mechanisms for both regional and national capacity building; and (iii) harmonizes and adjusts measures according to national environmental, institutional and socio-economic conditions.<sup>62</sup> In effect, the regional approach to ocean governance is now looked upon as an endeavour to bring all the actors – national, regional and global – in the same continuum. Also, it is at the regional level that some of the joint efforts of the regional littorals for protection and preservation of the marine resources and environment, undertaking marine scientific research, ensuring marine safety and enforcement responsibilities between port states are envisaged. For such activities, various articles of UNCLOS such as 74, 83, 122, 123, 191, 200, 207, 208, 210, 212, 276 and 277 deal with regional maritime cooperation in several dimensions.

Once a strong commitment to regional cooperation is made, initiatives like 'joint management of resources' and 'joint enforcement and surveillance' become easily realizable. This is because disputes in the seas and oceans are not always over space or territory. It is more a question of access to resources for their exploitation, preservation and conservation. As a result, disputes which do not involve territorial claims, but are resource-based appear to have a better chance of being managed. In a similar vein, 'joint enforcement and surveillance', in view of the various maritime crimes with trans-boundary implications, is now being initiated in many regional seas and oceans. Considerable stimuli to this move are derived from the desire of many countries to

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<sup>62</sup> P Akiwumi and T Melvasalo, 'UNEP's Regional Seas Programme: Approach, Experience and Future Actions', *Marine Policy* 22, No. 3, 1998, pp.229-34.



use navies for peaceful purposes. With respect to cooperation at the regional level, it is important to take note of 'maritime regime building' which is gaining wide currency in contemporary ocean governance. Essentially, non-oceanic in nature, the concept describes the trend towards sequentially negotiated arrangements involving mostly the same actors over a period of time.<sup>63</sup> More specifically, regime building in case of marine region is a set of agreements among a group of actors specifying: (i) the distribution of power and authority for the marine geographical region; (ii) a system of rights and obligations for the members of the group; and (iii) a body of rules and regulations that are supposed to govern the behaviour of members.<sup>64</sup> Finally, it needs to be borne in mind that cooperation at the regional level sets the stage for global cooperation in maritime affairs. At the global level, it is UNCLOS that has set the central stage for ocean governance through a system of treaty and few sub-regimes. The most important among these is the International Maritime Organization (IMO) that is taking the lead at the global level in formulating and coordinating the fight against piracy and armed robbery at sea. Besides UNCLOS, the UN Conference on Environment and Development (UNCED) process, in particular Chapter 17 of Agenda 21 provides certain mechanisms for ocean governance.<sup>65</sup>

## 5. Concluding Remarks

While, at present, marine policy problems are figuring prominently in Southeast Asia's international relations, the fact remains that efforts towards addressing them have not yet fructified to the fullest. While at the national level, integrated coastal management remains in vogue in most of the Southeast Asian nations and it is being catalyzed by ASEAN, cooperation at the regional level remains at best

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<sup>63</sup> O R Young, cited in Abul Kalam Azad, "Maritime Cooperation in South Asia: Opportunities and Challenges", *Ocean Yearbook*, University of Chicago, 2004, pp.512-542.

<sup>64</sup> See for details, Mark J Valencia, "Regional Maritime Regime Building: Prospects in Northeast and Southeast Asia", *op. cit.*, p.231.

<sup>65</sup> See for details, Abul Kalam Azad, "Maritime Security of Bangladesh" in Mufleh R Osmany and Muzaffer Ahmad (ed.), *Security in the Twenty First Century: A Bangladesh Perspective*, Academic Press and Publishers Limited in association with Bangladesh Institute of International and Strategic Studies, 2003, pp.159-229.

in its incipient stage. However, what is more striking at the moment is the growing consciousness about oceans in Southeast Asia as marine activities have played a significant role in the region's recent economic development. At present, it may be premature to hope for extensive cooperation in a region composed of increasingly nationalistic developing states. Perhaps, necessity will be the mother of cooperation'.<sup>66</sup>

In effect, coming out of the present impasse would require tremendous political commitment from the regional governments. Along with this would be the need for a new realization that threats unite, and that lack of cooperation on non-political and non-controversial maritime issues may lead to a rapid destruction and loss of valuable marine resources in the region, and increasing criminalization of the ocean. Such a realization would definitely not be without its political implications. The expected dividends, both economic and political, of cooperation at the regional and international levels in all sectors pertaining to the oceans would be promising for all. At the practical level, there is, therefore, the need to develop the national marine institutions, long-term systematic research and skills, replace narrow expertise by the epistemic communities, conduct high level inter-governmental cooperation through multilateral programs and agreements, recognize the role of the NGOs and garner support for financial aid and assistance.

Finally, if Southeast Asia can prove itself to be a successful laboratory for marine management, then lessons can be drawn from it for South Asia as well. In this respect, the prospect for inter-regional maritime cooperation between the two regions, both littorals to the common Indian Ocean, may not remain a chimera as many would suppose. Needless to mention, despite a host of problems and challenges, both the regions have witnessed cooperation in the marine affairs under the aegis of their respective Regional Seas Programs, the floated idea of Bay of Bengal Community, and in case of Southeast Asia even under the ASEAN forum. What one probably notices, in both the regions, is a number of weaknesses like insufficient capability

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<sup>66</sup> Mark J Valencia, "National Marine Interests in Southeast Asia" in George Kent and Mark J Valencia (ed), *Marine Policy in South Asia*, University of California Press, Berkeley, 1985, pp.55-57.

to prioritize the environmental issues in development activities, lack of adequate financial, institutional and legal arrangements to ensure proper implementation of various environmental protection policies, lack of human and financial resources, and lack of political will and coordination within the concerned governments. All such weaknesses can easily be overcome if mechanisms of maritime cooperation at the three-tier levels, national, regional and international, are strictly adhered to by the littorals whether in Southeast Asian or South Asian seas, in strict conformity with contemporary ocean governance.