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IMPACTS ON MARITIME TRADE WITH REGARD TO NAVIGATIONAL ROUTE ADJUSTMENTS IN AVOIDING CONFLICTS WITH MARINE PROTECTED AREAS: AN INSIGHT TO THE LAW AND POLICY

Dan Malika Gunasekera*

Abstract

Establishing a Marine Protected Area (MPA) in a State's maritime jurisdiction is a concept that became a much of practical approach alongside IUCN's (International Union for Conservation of Nature) efforts for the protection of maritime environment. Although, the 3rd United Nations' Conference on Law of the Sea (UNCLOS III) emphasized the importance of protecting seas and oceans as a State's duty within its role as a custodian, this conceptual framework has not been well laid upon on its Members States beyond the conventional provisions enumerated in its entirety, and in Article 194.5 in particular. However, later development of the subject has alarmed the international community to a critical juncture where they have felt the importance of establishing MPAs in most sensitive sea areas by 2012. It is a well-known fact that shipping contributes heavily on issues pertaining to marine pollution in coastal waters though it is not the main cause taking into consideration of land-based sources. Nevertheless, shipping does contribute a considerable degree of hazard to living and non-living resources of the seas, especially considering its effects on endangered fish stocks. Unlike in the case of a global initiative, number of regional and unilateral means of proclaiming MPAs has taken place while enacting remarkable policies in the Mediterranean, Baltic, and North Sea areas as evident. In particular, Lord Donaldson's Report in recommending Safer Ships, Cleaner Seas within the United Kingdom's so-called MEHRA (Marine Environmental High Risk Areas) policy has brought into limelight some important steps that need to put in place with the use of the seas for shipping activities while appreciating IMO's (International Maritime Organization) Resolution A.982(24) guidelines pertaining to Particularly Sensitive Sea Areas (PSSA) that focused on protecting maritime environment at the same time allowing shipping industry to continue without much interruptions. This piece of research will concentrate on the effects on maritime traffic within the aspects of marine life in the wake of proclaiming MPAs by States, with special attention to the proposals on shifting of traffic lanes for their survival. A Case Study will also be conducted in relation to the Cetaceans in the Southern Indian Ocean belt off Sri Lanka facing imminent threat of collisions with ships in searching for a balance between development and the environmental protection.

Keywords: Maritime Trade, Navigation, Marine Protected Areas, Maritime Jurisdiction, Southern Indian Ocean Belt

I. INTRODUCTION

According to the latest statistics¹, the world merchant fleet consists

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of over 50,420 ships that sail internationally while approximately 17,000 of it being bulkers. It is understood that the global seaborne trade has increased 3.4% in 2014 though it continued moderately in 2015 with experienced downturn in freight rates due to several factors involving supply and demand. In the midst of a scenario of this nature, the world's commercial fleet that consist of approximately 86,500 has grown marginally during the last year comparatively with the year before at a rate of 3.5% thus alarming the ship-building industry of a possible trim of business in the next few years to come.²At a time where the freight market experience drastic drop as aforesaid, any decision that affects maritime trade should be taken with utmost care to facilitate its' smooth functioning on a level playing field for all parties concerned. According to UNCTAD, The concept of 'sustainable shipping' has come into forefront in today's context in bringing together the industry well into fit the goals in a sustainable future.³ Unlike few decades ago, modern shipping industry has faced with some extra burdens in this context especially to be mindful of the 'sustainability' character in a balanced system with that of the marine environment. Establishing MPAs have not only become a concern of many coastal-States but also a weapon of its own to restrict unfavorable use of one's maritime territories. These approaches have imposed navigational as well as financial constraints on the shipping industry thus creating some alarming considerations within the modern context of 'responsible shipping'. The mandatory observance of deviations from normal routes in order to protect and preserve the marine environment thus avoiding MPAs have therefore raised awareness among the shipping community in addition to the already burdensome factors such as connectivity, costs of energy and transportation, levies and controls on carbonic emissions, climate change, and other financial burdens in day-to-day operations of ships.

¹ See Statista 2016 available at <https://www.statista.com/statistics/264024/number-of-merchant-ships-worldwide-by-type>

² See UNCTAD, Review of Maritime Transport 2015, United Nations available at http://unctad.org/en/PublicationsLibrary/rmt2015_en.pdf

³ See id p. 22.

II. SAFETY AND ENVIRONMENT: CO-EXISTENCE AND INTERPLAY

Since the origination of maritime activities, seafarers considered safety as an important element. However, there's no evidence that safety of navigation was given any statutory recognition in the history of maritime trade as it lacked regulations unlike in the present era. Although safety of navigation isn't itself a confined concept that lies within the subject of protecting the ship alone together with its crew and anything on board; it has spread to a much wider meaning thus covering the protection of maritime waters and anything that lies in and within such environment. Enacting international regulations were indeed a much seldom approach in the past⁴ until Convention on the International Regulations for Prevention of Collisions at Sea, 1972 (COLREG) brought into been an optional requirement⁵ for IMO to designate ship routes. These concerns were then addressed in the Maritime Safety Committee (MSC) at IMO back in 1964 where the respective member Governments were urged to advise their flagged-ships to follow the designated routes as a matter of avoiding collisions between vessels and in assistance with the navigable aid. This led the IMO to declare mandatory observance of all traffic schemes⁶ by seafaring community.⁷ As we know, this system that came to known as Traffic Separation Scheme (TSS) was regularized through Rule 10 of COLREG, required ships to navigate⁸ in designated and pre-determined lanes⁹ thus providing slight exceptions¹⁰ in special circumstances. What we need to bear in mind in this context of COLREG is that the

⁴ Practice of following predetermined ship routes has originated way back in 1898 in relation to passenger ships across North Atlantic.

See <file:///D:/ED/Research/Maritime%20Traffic%20Arrangements%20and%20Marine%20Protected%20Areas/Ships%20routeing%20-%20IMO%20Web.html>. This somewhat historical approach has led to the adoption of like provisions in SOLAS 1960 followed by numerous concerns been raised in relation of ship collisions by Liverpool Underwriters Ass. In 1963, and Institutes of Navigation of the Federal Republic of Germany, France, and UK concerning congested areas.

⁵ Rule 1(d).

⁶ Through the adoption of COLREG in 1972.

⁷ The first mandatory scheme was introduced in Dover Straits in March 1971.

⁸ Rule 10 (b)

⁹ Made mandatory by Rule 10 (a).

¹⁰ Rules 10 (c), (d), (k), and (l).

particular convention was brought into being as a matter of preventing collisions at sea rather than of a mere protection of marine environment. This classical approach has now been enlarged in the wake of modern approaches that have been developed in the latter's benefit.

In much later developments, MSC's work has required swift changes in developing strategies for maritime traffic in line with Marine Environment protection Committee (MEPC)'s concerns over environmental protection. Certainly, Chapter V¹¹ of Safety of Life at Sea, 1974 (SOLAS) has influenced in extending the scope of 'protection' *per se* to environment over the safety of life on board. It is quite evident that the co-existence of COLREG and SOLAS has been felt insufficient as far as the maritime environment is concerned within the work of the MEPC than that of the MSC alone. The very purpose of addressing ship routing with marine environment protection is to facilitate the smooth co-existence of both the trade as well as the navigable waters for the sustainability of cleaner and safer oceans and seas as a paramount objective of the IMO being the international regulator in marine affairs. Another important match-making is the combined execution of public and private law perspective especially considering the Law of the Sea and Maritime Law. While the former pays much of the emphasis on protection of environment, the latter concentrates heavily on ship safety and ancillary on marine environmental protection. It is in that context, one should look at issues pertaining to ship routings in line with protected areas.

III. TASK OF SETTING UP MPAS

If one may to ascertain the effects of shipping on marine environment are only with regard to pollution, such assumption may not be compatible with modern threats posed by navigating objects. Since, the law is well settled in relation to pollution damage at both national and international levels, there's much need that exists in relation to threats faced by living and non-living resources of the sea in light of shipping activities. UNCLOS's Article 211.1 doesn't seem quite exhaustive to the extent of protecting these said resources within the context of

¹¹ Regulation 9 on Ship Routing.

pollution from ships. The reason behind my view is mainly because the 'routing system' it refers is narrowed down to accidents between ships or navigational aid that result in 'pollution'. Rather a much wider scope has been improvised in its Article 61 on conservation of living resources as a matter that purely falls within the ambit of coastal State competence. But unfortunately, those measures of conservation and management do not directly provide the coastal States in addressing the issue of ship routing as a national concern. It is therefore in this context that the establishment of MPAs would fall as an important national concern for a coastal State in determining the TSS and any amendments to them as a measure of protecting the maritime environment as a whole. The core issue is whether any of the main international instruments have been able to provide a dependable definition to MPA, and will such deficiency trigger law making process in the setting up of a navigational route adjustment system globally. The only acceptable definition to-date can be found in IUCN's Resolution 17.38 (1988)¹² which states "any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features which has been reserved by law or other effective means to protect part or all of the enclosed environment". The concept of MPA would coincide with PSSA¹³ introduced by the IMO¹⁴ to a certain extent but not to its entirety as far as the former is concerned. While the setting up of MPAs rests within the coastal jurisdiction of States, designating PSSA would lie within the competence of IMO as the said international regulator for shipping to make sure that no detrimental effects would be posed by the use of the sea for maritime activities.

Reviewing the IUCN's definition on MPA would prove that both scientific and legal phenomenon have to be put in place in determining its application to a given sea area. Having the main objectives of seeking to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable, IUCN's promotion of developing scientifically and legally sound methods

¹² Genera; Assembly reconfirmed in Res. 19.46 (1994).

¹³ MEPC of IMO made special emphasis on this subject in response to a Resolution adopted by the Int'l Conf., on Tanker Safety and Pollution Prevention, 1978.

¹⁴ Res. A.982(24), 6 Feb 2006.

of protecting marine environment is equally commendable as of the IMO's. As per its working agenda, IUCN's view that the world urgently needs a comprehensive system MPAs' to conserve biodiversity and to help to rebuild the productivity of the oceans is the utmost necessity in the backdrop of international navigation. It is in that context, both the shipping as well as marine environment could sustain hand-in-hand rather than of a demise that both those two aspects would face in survival or extinct. On the other hand, PSSA is an area that needs special protection through action by IMO because of its significance for recognized ecological, socio economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities.¹⁵In contrast, MPAs and PSSAs were established for differing purposes though their primary goal was to protect maritime environment at large. While 'conservation' and 'protection' stood as the main objectives¹⁶ in the former case; 'protection', and 'reduce and elimination of risks' from shipping activities¹⁷ formed the basis in the latter.

IV. TOWARDS JUSTIFICATION OF NRAS

the scope of competence, IMO's role in determining ships' routing system thus goes a long way. Although, safety of navigation is considered the primary element in which it could be justified, it just forms the basis for mere justification. In its "Guidance Note on the Preparation of Proposals on Ships' Routing Systems and Ships' Reporting Systems for Submission to the Sub Committee on Safety of Navigation"¹⁸, the very purpose of establishing ships' routing system is clearly explained to cover not only improving of safety of life at sea, and safety and efficiency of navigation but also to protect

¹⁵ See para 1.2, Res. A.982(24).

¹⁶ According to Kathy Walla, Dept. of Conservation, New Zealand, some of the leading benefits of MPAs are conservation of biodiversity, protection of attractive habitats and species attracted to tourism, increased productivity of fisheries, gaining increased knowledge of marine science, creating refuge for intensely exploited species, protecting of genetic diversity of heavily exploited population, protection of cultural diversity, and etc.

¹⁷ See para 1.4, Res. A.982(24).

¹⁸ MSC/Circ. 1060, 6 January 2003.

the maritime environment¹⁹. One must bear in mind that the routing system isn't itself an autonomous approach of the IMO in particular, though it encourages ships to navigate along designated routes as a mandatory requirement, but an acceptance to a consequent request. Importantly, States that apply for a designated route along its adjacent waters must set forth the objectives for such submission by way of a demonstrated proposal. While States may assign PSSAs in its territorial jurisdictions on one hand, it may also designate TSS in conjunction with accepted procedure in avoiding clashes between the two. In doing so, such States must submit proposed routine measures to IMO's Sub-Committee on Navigation, Communication, and Search and Rescue (NCSR) for the adoption by MSC. On the other hand, International Hydrographic Organization (IHO) would take action to identify protective measures after receiving final designation of PSSAs. Once they are well coordinated and established, it is the duty of those States to give due publicity to such routes and their amendments in enabling the Governments whose flags are flown in their respective ships take due regard to inform such ships of the PSSAs as well as the designated routes.

It is quite certain that both MPA and PSSA designations are aimed at serving the purposes of marine environmental protection but the adoption of routing system either as TSS or Navigational Route Adjustment (NRA) as suggested by me; clash in principle. It is because, the principles of protection and preservation of marine environment, and economics of development are two different things that constant interaction result in conflicts rather than operate in harmony. It is the very reason that the modern schools of thoughts prefer to look for solutions within the doctrines of 'sustainability'. One of the main obstacles in re-routing is associated with issues relating to port accesses and marketability of port services for many countries irrespective of whether such States are developed or not. In a competitive market environment, ports are facing various hardships in attracting ships to its ports. In the midst of this matter, re-routing would only post threats to development of those economies than being concerned on the environment. It is the intention of the on-going to observe such varying scenarios where NRAs were effected in consideration of both these said concerns, and further analyze

¹⁹ See supra n. 18, para 1.2

the impacts on shipping in re-routing processes.

Some of the leading cases involving high density maritime transportation where shipping routes have been adjusted in accordance with the proclamation of MPAs and PSSAs are worth discussing in this regard. One such example is the measures taken in respect of the passage through the Torres Strait in Great Barrier Reef which covers an area of around 345,500 sq. km. that stretches to over 2,000 km along Queensland coastline in Australia. Due to its rich marine habitat consisting of 2,900 coral reefs and 900 islands enriched with invaluable resources of both living and non-living, the Great Barrier Reef Marine Park Act has bestowed responsibility of managing the submerged area with the Great Barrier Reef Marine Park Authority (GBRMPA). As the Torres Strait is an interface between the diurnal tidal regime of the Indian Ocean and the semi-diurnal tidal regime of the Pacific Ocean while there exists of 6 mega port accesses and 7 port accesses in the area of Great Barrier Reef. In this region, ships are required to possess a complete passage plan laid out on the appropriate paper charts and electronic navigation systems prior to the boarding of the pilot. Due to the geographical variance, pilot and master may be required to seek alternative routes in special circumstances. Interestingly, Designated Shipping Area (DSA) is charted through Marine Park whereas ships may enter any Marine Park Zone inside DSA though they only operate in General Use Zone in case they opt to stay outside DSA. Since, GBRMPA is empowered in law to impose penalty for any infringement, written permission is needed for ships to enter any other zone outside DSA. Furthermore, such passages do not fall into the meaning of ‘Narrow Channel or Fairway’ as defined in COLREG.²⁰The second example is the modifications effected to shipping lanes in Stellwagen Bank Marine Sanctuary off the coast of Massachusetts, Cordell Bank, Gulf of the Farallones, and Channel Island Marine Sanctuaries off the California coast in the US. In both these cases, actions²¹ were based with regard to the protection of endangered species²² such as blue and hump-

²⁰ See also Australian Maritime Safety Authority, Queensland Coastal Passage Plan, July 2014, available at https://www.amsa.gov.au/forms-and-publications/Publications/AMSA125-QCPP_Booklet.pdf

²¹ See National Marine Sanctuaries Act 1972

²² See The Endangered Species Act 1973 and Marine Mammal Protection Act 1972

back whales that come within the meaning of wildlife. In the former case in Massachusetts²³, these adjustments have resulted in reducing the risks of ship striking whales by 81% while National Oceanic and Atmospheric Administration (NOAA) adopted three proposals²⁴ to reduce ship strikes in the latter mentioned areas, extensively. The third such case can be identified as Wadden Sea example in the North Sea off the coasts of Netherlands, Germany and Denmark. These countries had earlier entered into a Joint Declaration²⁵ on the Protection of the Wadden Sea for the management and enforcement measures for breeding and resting of mammals and birds with low noise levels. Another notable case is the MEHRA (Marine Environmental high Risk Areas) project in UK. Pursuant to the report²⁶ of Lord Donaldson *Safer Ships, Cleaner Seas*, several key importantly sensitive areas around the UK coast were identified in reducing marine pollution and mitigate marine risks in what refers to as a dual approach in meeting both ends; threats to sea and threats to ships. One of the most important strategies it adopted was the ousting of the so-called 'blanket ban' thus introducing a system of informing the Masters of areas where there exists of a real prospect of a problem rather than taking of consequential defensive measures. It was quite identified that the MEHRA project could fall in line with the existing measures adopted in designing maritime traffic routes taking into consideration of TSS, Areas to be Avoided, Precautionary Areas, Deep Water Routes, Mandatory and Non-Mandatory Ship Routing Systems, and Other Measures such as IMO recommendations.

While UK develops its MEHRAs as aforesaid, European Union as a whole is driven by its institutional mechanism through Maritime Spatial Planning²⁷ (MSP) to give effect to a coordinated management of maritime space²⁸. It has focused on many key areas of different seas

²³ In 2007

²⁴ In 2012

²⁵ In 1982

²⁶ London: HMSO, 1994. Cm 2560. ISBN 0-10-125602-7.

²⁷ Defined by UNESCO as a public process of analyzing and allocating the special and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that are typically specified through the political process.

²⁸ Roadmap for Maritime Spatial Planning: Achieving common principles in the EU was adopted by the Commission on November 25, 2008.

to which the EU is competent in extending its legislative process. One example is the study of four areas²⁹ in the Mediterranean³⁰ including the Alboran Sea³¹, Adriatic Sea Basin³², Western Mediterranean³³, and the area surrounding Malta³⁴. Observing the gravity of the issue, it is understood that over 220,000 vessel over the gross tonnage of 100 tonnes cross the Mediterranean per year. This is approximately 30% of the world merchant shipping traffic coupled with 20% of the oil carriage.³⁵ It is considered that majority of collisions that take place is a result of number of factors including high density maritime traffic, increased masking ambient noise, possible hearing impairment in whales, the whales inability to avoid high noise levels³⁶ and etc. Considering the extremely valuable and sensitive coastal habitats within the framework of the Habitat Directive of the EU³⁷, the consent of the IMO and Spanish maritime authorities were obtained to shift the TSS off Cabo de Gata from 5 to 20 nms near the Southern Almeria Special Area of Conservation. This is one example where NRA was made within the competence of the EU. If we go back to the Adriatic Sea's issue, it is obvious that the EU's approach is quite homogeneous to that of its policy on the Mediterranean. However, this regional approach is aptly supported by MSP management system through local laws and institutions in order to tackle the respective national concerns in both marine environment and the shipping trade. In particular,

²⁹ Exploring the Potential for Maritime Spatial Planning in the Mediterranean Sea was launched in October 2009.

³⁰ See also Maritime traffic effects on biodiversity in the Mediterranean Sea, Vol. 1 – Review of impacts, priority areas, and mitigation measures, edited by A. Abdulla, O. Linden, IUCN Centre for Mediterranean Cooperation / IUCN Global Marine Programme, 2008, available at <https://portals.iucn.org/library/efiles/documents/2008-042-1.pdf>

³¹ Bordering Algeria, Morocco, Gibraltar(UK), Spain.

³² Bordering Albania, Bosnia and Herzegovina, Croatia, Italy, Slovenia, Montenegro.

³³ Bordering Italy, France, Monaco, Spain.

³⁴ Including Tunisia, Libya, Italy.

³⁵ Frantiz and Notarbartolo de Sciarra (2007).

³⁶ See supra n. 30 p. 15.

³⁷ EEC, 1992

Italy³⁸, Croatia³⁹ and Slovenia⁴⁰ have taken some collective measures through their national laws and institutions to address those issues effectively. The next immediate attention should be directed to the measures taken in the area of the Alboran Sea. This forms an important shipping route for all ships entering and passing the Mediterranean to and from Atlantic sector using some great ports such as the Port of Gibraltar and Algeciras. In terms of DWT, these two lie at 1st and 2nd ranks respectively in the Mediterranean, and 4th and 6th places in terms of number of calls⁴¹ by ships. Likewise in the Adriatic, States bordering this Alboran Sea are namely Spain, Morocco, and Algeria have taken various steps tackle related matters. Spain in particular that has adopted the Barcelona Convention Protocol on Integrated Coastal Zone Management (ICZM) has taken measures at home through the enactment of Marine Environment Protection Law while Morocco too has signed the said Barcelona Protocol whereas Algeria addresses these issues within its local Coastal Law⁴².

Unlike in the case of establishing MPAs within national territorial jurisdictions, the matters concerning the regimes of EEZ and High Seas have fallen into many debates. Although the UNCLOS has settled the fundamentals in this respect, there remain many unfinished tasks yet to be regularized through effective law making. While coastal States' sovereign rights have been guaranteed via Article 56.1 (a), and jurisdictional rights have been vested upon such States to protect and preserve the marine environment by virtue of Article 56.1 (b) (iii); Article 73.1 grants the exclusivity for such coastal State to conserve and manage the living resources lying in the waters of their EEZ. These

³⁸ In addition to Regional Coastal Plans, national legislations such as the Law on Marine Protected Areas (N°394/1991) identifies and defines activities in MPAs in order to ban dangerous activities that could jeopardize the protection of environment.

³⁹ Although no maritime spatial planning legislation exists, the Maritime Code (1994/1996) regulates such maritime activities.

⁴⁰ Enactment of Spatial Planning Act 2007 has evolved in setting up standards on environmental protection though not specifically to maritime waters. In addition the Maritime Code (PZ-UPB 2 – official Gazette nr. 26/01 and its subsequent amendments regulates jurisdiction and control of navigational safety in territorial waters and protection of sea against pollution from vessels and legal regime of ports.

⁴¹ Source: REMPEC, Study of Maritime Traffic Flows in the Mediterranean Sea; Lloyds MIU data, 2006

⁴² Loi N° 2002-02 du 22 Dhou El Kaâda 1422 correspondant au 05 février 2002.

provisions ensure a coastal State's right to establish MPAs to the extent that unnecessary interference with rights of navigation shouldn't be jeopardized thus respecting maritime transportation of vessels using such regimes without any infringement of coastal States' entitlements. Nevertheless, those coastal States would still enjoy their competence in stipulating TSS and NRAs in its own discretion. Clearly, the situation with regard to the High Seas is completely different. Since it forms areas outside the national jurisdiction of coastal States, establishment of any MPA by a competent authority such as the UN would certainly interfere with freedom of navigation⁴³ requiring justifications for both those elements to persist. As far as the marine environment is concerned, Article 94.7 provides some justification to that end whereby it authorizes coastal States to exercise certain authority against any prejudice been cause while Articles 117 and 118 impose the reciprocal rights and duties on coastal-States and flag-States respectively in the use of the sea with utmost care on the marine environment.

According to the latest reports of the IUCN⁴⁴, MPAs have been created around the world in the high seas areas though only around 1% of the world's oceans fall into this calculation out of 64% of the area beyond the EEZs. It has mentioned that "without an appropriate legal framework, High Seas Marine Protected Areas cannot be successfully created". It has further laid much emphasis on the success of the Malaga Workshop that has spearheaded in four streams, namely, the adoption of international agreements and conventions; global fisheries instruments; regional arrangements; and potential priority sites, and identifying opportunities. This shows the tendency towards enacting laws as a priority for the protection and preservation of the marine environment. The most difficult part in that respect would be to address the MSPs and Navigational Route Adjustments to complement the laws on protection and preservation of MPAs. The Nautical Institute in one of its recent publications⁴⁵ has identified certain navigation issues

⁴³ UNCLOS Article 87.1

⁴⁴ See High Seas – Ocean territory under threat, IUCN, available at https://www.iucn.org/sites/dev/files/import/downloads/high_seas_iucn_wwf.pdf

⁴⁵ D. Patraiko, P. Holthus, *The Shipping Industry and Marine Spatial Planning – A professional approach*, World Ocean Council and Nautical Institute, 2013, available at [file:///C:/Users/admin/Downloads/shipping_and_msp_printable_final_v1%20\(1\).pdf](file:///C:/Users/admin/Downloads/shipping_and_msp_printable_final_v1%20(1).pdf)

where it mentions that ‘in the future, greater demands for ships to navigate closer to navigational hazards’ may arise ‘while ensuring high levels of safety’ where ‘serious consideration will need to be given to issues of authority and liability’.⁴⁶ Although, it has stressed much on the affording of services and development of technology, I am of the firm view that mutual cooperation between coastal States and flag-States in navigation within national jurisdictional limits have to be strengthened while a dependable legal domain is of utmost importance to harmonize situations in navigation outside such national jurisdictions of coastal-States. It is quite welcoming to note the points mentioned in the balancing of environmental concerns with that of the commercial concerns in the said publication where it has categorically mentioned that MSPs would impact routing in environmental protection thus resulting in the commercial operations. Furthermore, it has very correctly identified the increase in the costs of shipping and goods due to increased route distances while meeting bunker expenses, costs of wages and insurances, as well as maintenance that become quite cumbersome.⁴⁷

V. CONSIDERATIONS AND RESULTS

Having considered the various scenarios in the justification of Navigational Route Adjustment, our main attention should now be focused on the core issue of this research, i.e. to determine the balancing interest of marine environment and development of a coastal-State, in light of shifting TSS as a leading option. There are several considerations. Firstly, we must see whether the proposed MPA is quite unique to that particular section of the ocean. In that respect, it is important to identify the ecological advantage for the coastal-State or for that region. In the case of endangered species, this would be two folded. One is that such specie has gathered the attention of tourism industry of the country while the second being behavioural pattern that the breeding process cannot take place in an alternate location upon a natural or artificial shift. As long as economic development is concerned, the coastal-State would be in a highly disadvantaged stage if it impacts tourism, but

⁴⁶ See *id.*, p. 7

⁴⁷ See *supra* n. 45, p. 7

to the extent, such State is depended on tourism in its overall GDP. The option of shifting breeding site is solely depended on scientific elements where such a move may either be totally unachievable or incur enormous cost that it may not be feasible than shifting the TSS or adjust the route proportionately. Similar position may remain in respect of MPAs consisting of non-living resources such as corals and flora, though the latter would not be attractive in tourism industry unless there exists of some special features that generates publicity.⁴⁸ Secondly, we must see whether the proposed MPA consists of non-migratory species. Although, this would not apply to non-living resources, the importance of taking this concern into consideration is due to changes in conditions that may provide an option to institute occasional or seasonal adjustments in routes. If the main concern was with regard to the presence of migratory species, there would exist of a better option in adjusting the route during the time of threat. This would have lesser economic impact on shipping as long as the additional costs incurred by shipowners and charterers while in the perspective of the coastal-State, its development element would not be that much threatened in the wake of a NRA. This would be the very like scenario in relation to Cetaceans. Since the relevant recommended proposals need agreement of the NCSR that would in turn forward for adoption at the MSC, providing of accepted justification of amendments are inevitable. It is a mandatory requirement that the proposing State(s) mention the objectives pertaining to the proposed routing system while demonstrating needs for its establishment, and rationales behind such a move together with a description of the historical incidents including collisions, grounding, and damage to marine environment; categories to which the proposed amendments apply; and proposed impact on navigation.⁴⁹ The NCSR must be presented with a strong case to proceed to the said next level of submission. For example, the adjustment of Boston shipping traffics lanes presented this important element connected with measures to avoid dangerous collisions with Cetaceans. Data analysis of the researches

⁴⁸ Two way shipping route in Diamond Passage and west of Holmes Reef in the area of South-West Coral Sea was agreed by the NCSR on the basis that the recommended route adjustment would reduce risks of ship collisions and groundings whilst ensuring ships keep clear of reefs, shoals and islets in Australia's Coral Sea Commonwealth Marine Reserve. See also NCSR, 2nd Session, 9-13 March 2015.

⁴⁹ See NCSR 2 WP.4, Annex 4.

that have been conducted over a period of 25 years in the vicinity of the Boston Harbour where a high concentration of Humpback whales were spotted in the Stellwagen Bank National Marine Sanctuary through which vessels had to pass in order to reach the said Harbour though few were reported right next to it. The multi-stake holder move to shift this lane by 12 degrees north has helped reduce risk of collision with whales between 58% - 81%. However, the impact on shipping has caused a 10-22 minutes increase in reaching the said port with an estimated 3.75 nm deviation thus incurring additional costs, mainly in relation to bunker usage. Obviously, shifting of the sanctuary would not be an option in such scenario while the economics of these two scales prove that the impact on shipping would be much lesser than a shift of the whale breeding and behavioural site. Having conducted a thorough investigation, NOAA⁵⁰ had concluded that the extensive studies of ship traffic and whale behaviour have proved the ultimate decision to move; is economically violable than any other solution.

Thirdly, we must see whether the economic benefits are greater than environmental benefits. This is one of the most crucial aspects of the matter as well as the core issue in this paper. Although, it is not a fact finding mission of 'what comes first' or whether 'horse before the cart or cart before the horse'; it should be a process of identifying the underlying principles in a new economic order. Some reference could be had to the OECD's work, and in particular to its Guiding Principles Concerning the International Economic Aspects of Environmental Policies, 1972⁵¹, in which it is recommended that the harmonization of environmental standards should be made only where valid reasons for difference do not exist, and where there are no significant obstacles to the trade.⁵² Here, concerns can be raised in regard to proportionality test against precautionary principle. At this juncture, I wish to take up the Sri Lankan case study on the Southern Indian Ocean Whales off the coast of Dondra, the south-most point of the island-State, in the quest for their protection and preservation.

The particular survey which has been carried out within an area of

⁵⁰ See <http://sanctuaries.noaa.gov/news/press/2007/pr062807.html>

⁵¹ Available at <http://sedac.ciesin.org/entri/texts/oecd/OECD-4.01.html>

⁵² See Art. 1.A (b) 8.

150 km east-west and 50 km north-south, and to a further depth of 13m into deep sea believed to consist of a high density Whale population, suggest a shift of 15 nm southwards from the current TSS.⁵³ Unlike in the case of Stellwagen, where a considerably longer period of research and surveys has been carried out spanning to 25 years, these suggestions of the work are based on a smaller concentration of a window of 320 days⁵⁴. Furthermore, the relevant survey has indicated that the whale patterns were conducted during inter-Monsoon and north-east-Monsoon, and has hence suggested that ‘different oceanographic conditions might be expected to result in different factors influencing whale density’.⁵⁵ In addition, the particular research has found the presence of 243 Blue Whales in the selected vicinity within an average of approximately 90 km on transect on surface of the sea while 38 Blue Whales have been sighted underneath the sea within an average of 72 km on transect. It is noteworthy that these sightings aren’t indicating any overlapping or repetitions, and a quite narrow frame of time may not produce conclusive evidence. The study has further proved that most of these whales appear within 500-2000 m depth with the high density remaining at around 800 m⁵⁶. In view of their findings, the research team has suggested the abovesaid amendment to the existing TSS thus taking into consideration of the maritime traffic to and from Red Sea where transit would add an additional 5 nm to the existing while it consist of a 9 nm and 12 nm addition to the west-coast of India and Arabian Gulf, and Colombo respectively. In its entirety, it is doubtful whether the said research has considered the access to and from the newly built Port of Hambantota located towards the south-east of the country. At a time where the present Government is focused on developing and promoting the said Port, it is quite doubtful whether the Maritime Administration would tolerate any deviation from the existing TSS. Understandably, the suggested deviation as per the said research study would constitute a considerable way-off to and from the present TSS in relation to the said Port rather

⁵³ See T. Priyadarshana and others, An update on work related ship strike risk to Blue Whales off southern Sri Lanka, available at http://biospherefoundation.org/wp-content/uploads/2014/09/SC66aHIM_Priyadarshana_1.pdf

⁵⁴ Between 03/07/2013 and 17/05/2014. Furthermore, single survey days have been conducted accordingly in July, October, and December in 2014, and January 2015.

⁵⁵ See supra n. 53 p. 3.

⁵⁶ See supra n. 53 p. 8.

than much impact on the long-existing Port of Colombo. Nevertheless, a definitive decision as to the degree of deviation could only be achieved through proper hydrographic survey and compilation of chart, which has yet to be undertaken by the authorized agency, National Aquatic Resources Research and Development Agency (NAARA). On the other hand, Sri Lanka has not yet gained membership of the International Whaling Commission, thereby the subject of management and conservation of whales become a subject within the application of the UNLCOS provisions, and its domestic laws consisting in the Fauna and Flora Protection (Amendment) Act No. 22 of 2009⁵⁷ and its principal Ordinance No. 2 of 1937. The said local law enables the Ministry of Sustainable Development and Wildlife in conjunction with the Wildlife Conservation Department to declare and constitute 'Marine National Parks'⁵⁸ as a measure in declaring MPAs. While the subject of declaring MPAs with respect to Whales and other fauna falls within the ambit of the said Ministry, statutory competence in proposing any amendments to the existing TSS lies with the Ministry of Ports and Shipping, and in particular with the local regulator, the Director General of Merchant Shipping. Therefore, it is of utmost importance that these two ministerial institutions liaise in cooperation for a well coordinated solution.

Fourthly, we must see whether there are any alternate solutions that are more feasible than resorting to a re-routing. While shipping sector has readily adopted few possible alternatives, there exists of number of other potential options that may be implemented. Let us first focus on the already adopted measures prior to the discussing of anything else. As a matter of fact, one may look at several adjustments that have taken place with regard to 'maritime traffic congestions', and 'easy access' considering three key factors that affect the 'maritime trade' in particular, namely cost, speed, and reliability. For example, it is a well known fact that considerably larger ships over 10,000 TEUs have been deployed by many shipping companies through the Suez Canal in order

⁵⁷ In its Schedule II it has listed the 'Mammals and Reptiles that are Strictly Protected' that includes Blue Whales (*Balaenoptera musculus*), Fin Whales (*Balaenoptera physalus*), and Humpback Whales (*Megaptera novaeangliae*) all of the *Balaenopteridae* family, and Sperm Whale (*Physeter macrocephalus*), Pigmy Sperm Whale (*Kogia breviceps*), and Dwarf Sperm Whale (*Kogia simus*) all of the *Physeteridae* family.

⁵⁸ See Act No. 22/2009 sec. 3.1 (e).

to reap the benefits of cost saving, gaining competitive advantage, and possibilities of carrying more cargo on board. Comparatively, alternative routes along African continent would thus incur higher costs and longer time periods in particular for ships that operate from Europe to Asia and vice versa though on the part of such ships rest the obligation to sail in that route for the collection and delivery of cargo in African continental ports. Although, an alternate of such nature would not make a direct impact on the marine environment, but inadvertently distributes overall effects onto other areas of the maritime environment. This would clearly decentralize the exorbitant volume of all and sundry. On the other hand, opting for an alternate route to avoid congestion would bring-about trade benefits such as minimizing delays in delivering the goods to the hands of the customer by using alternate ports instead of the busier ones. This approach has been considered in the US West-Coast Port Dispute.⁵⁹ Considering these options, it can be suggested that the risks and dangers to the marine environment could be minimized through traffic diversion using NRA compatibly. However, selected MPAs within coastal sovereignty would not fall within this doctrine, and such strategy cannot be applied as a solution. The next option would be to look at possibilities of reducing and varying speeds at times of reaching at and during the times in, MPAs. It is a matter that needs to be assessed on a balance of probabilities between the economic aspects and environmental protection. Although, overwhelming majority of carriers, whether owners or charterers, would not support this idea, they would be in turn obliged to take precautionary measures as a means of the general principles of law. In its true sense, precautionary principle rests on scientific evidence of an identified hazard rather than of a mere policy. Therefore, proper research and studies must disclose a need to exercise precautionary principle in justifying the taking of measures by the carriers. If this is failed, the carrier would not have any obligation to take such measures. When there's clear evidence of danger to the marine environment, such carriers are bound to take the precautionary measures to avoid damage rather than relying upon any 'right' to proceed along a designated TSS. In that case, the carrier

⁵⁹ See J. Northam, U.S. West Coast Port Dispute Forces Shippers to Find Alternative, available at <http://www.npr.org/sections/thetwo-way/2015/02/20/387305541/u-s-west-coast-port-dispute-forces-shippers-to-find-alternatives>

would be obliged to stand on the precautionary principle and act with due diligence. This obligation would compel it to reduce speed at times of danger as well as in the wake of a designated MPA or risky area though a shift in the TSS has not been effected. In such circumstances, the carriers may look into an option of alarming the living resources by way of sound. That is the other possibility of evading damage on marine environment especially on marine mammals at large, but this option opens floodgates to another catastrophe already identified in maritime traffic; which is 'noise pollution'. Although, many interested parties didn't assess the amount of damage caused by maritime traffic on living resources underneath the sea until quite recently; newest studies have revealed the extent to which that could cause detrimental effects. This is in addition to the noise pollution generated by horns and distress alarms. Nevertheless, the on-surface noise pollution could be negated to a considerable extent in comparison with the said underwater effects generated mainly by the propellers. It is understood that impacts of noise pollution on underwater ecosystems are on the increase while a wide variety of marine animals especially the mammals such as whales depend on sound to navigate, communicate, and survive in the oceans. Adverse effects of noise pollution would certainly distract their abilities in identifying dangers whether generate above or underneath the waters. However, the alarm systems on-board would create more awareness than causing distract, and therefore, can be considered a favourable option in areas where TSS could not be amended on economic reasons.

Considering the alternative that have been adopted till now, I am of the view that the most forward thinking strategy is the one adopted⁶⁰ in the straits of Malacca under the auspices of the IMO as Marine Electronic Highway (MEH). The littoral States of Indonesia, Singapore and Malaysia were expected to benefit out of a project that linked shore-based marine information and communication infrastructure with the corresponding navigational and communication facilities aboard transiting ships in the said straits⁶¹ for their security and promotion of maritime environment while sustainably developing the marine resources in particular. Such a coordinated effort would thus

⁶⁰ Upon signing of Demonstration Project and Singapore on June 19, 2005.

⁶¹ See also <http://www.imo.org/en/OurWork/Environment/SpecialProgrammesAndInitiatives/Pages/MarineElectronicHighway.aspx>

complement the objectives of preserving the MPAs along the straits without interfering with maritime traffic.⁶²In addition to these efforts, further hi-technological support could be obtained to timely notify ships in avoiding risky areas. These could include remote sensing, built-in sensors in ships, shore-to-ship online assistance and the like. Such facilitation can easily be affixed to the existing and future MEH systems. The other advantage in commissioning MEH rather than periodical changes to TSS is that the former is well adoptable to changing circumstances with minimal interference on the part of the port-State and coastal-State controllers. Although, this method would be most compatible with changing patterns of seasonal conditions affecting the living, it would not make much of difference for non-living resources in a MPA.

VI. CONCLUSION

Although coastal States bordering busy maritime traffic have well adopted their respective TSS in line with the IMO's requirement in directing ships on safety of navigation, such existing routes seem to undergo checks and balances in wake of designated MPAs. Since designation of MPA is quite a recent development in the protection of seas and oceans, the law on maritime traffic cannot be considered settled as yet. Within its competence to deal with this issue, IMO has a long way to go in determining the extent to which the existing TSS of States should be allowed or disallowed. In determining the proper parameters, application of the law alone would not suffice on the part of coastal-States but a balanced strategy consisting of equitable solution should fall in place.

In this respect, the law and policy relating to amending TSS to suit the demands of designating MPAs should be highly respected. As many States have yet failed to designate their respective MPAs to the fullest and required extents; taking of actions in finalizing these designations is of utmost importance in avoiding damage on mutual interests, i.e. on marine environment as well as of the vessels. It is understood that the mechanism in amending the existing TSSs is well placed within the

⁶² Main concerns surround the cost factor where the Malacca case involved an approximate total of USD 9.573 million.

IMO system, and the need to expedite such process arise at national level in facilitating the protection of MPAs. Therefore, for a well coordinated NRA, it is mandatory and thus imperative for coastal-States to formulate a clear strategy focused on effective protection of marine environment as its primary goal in both its law and policies relating to marine environmental protection and vessel traffic management while respecting freedom of the seas and doctrine of innocent passage.