

**KEYNOTE ADDRESS – 18<sup>TH</sup> MEETING OF NORTH INDIAN OCEAN  
HYDROGRAPHIC COMMISSION (NIOHC)**

Vice Admiral Vinay Badhwar, Chief Hydrographer and Chairman North Indian Ocean Hydrographic Commission,

HE Mr J Goburdhun, High Commissioner of Mauritius to India,

Rear Admiral Mustafa Iptes, Director, International Hydrographic Organisation,

Heads of delegation, delegates,

Ladies and Gentlemen, Good Morning.

1. On behalf of the Indian Navy, I extend a very warm welcome to all of you for the 18<sup>th</sup> Meeting of the North Indian Ocean Hydrographic Commission.

2. At the outset I must thank the organisers for providing me an opportunity to address such a distinguished gathering of professional Hydrographers. I am cognisant of the fact that India is one of the founder members of the NIOHC, which was mooted in March 2000, at an informal meeting in Monaco. The first meeting was held at Dehradun in 2002. At the time, NIOHC comprised six members and four associates. Today this vibrant organization has grown to 10 members, 6 associates and 3 observers, which is a remarkable achievement.

3. With the ongoing shift of global economic and industrial power to Asia, and the fact that the maritime domain is increasingly shaping the geopolitics of the Indian Ocean Region and the larger Indo-Pacific; the importance of the area of responsibility of the NIOHC, cannot be over emphasized. The waters of the North Indian Ocean wash the shores of over 40 countries, housing nearly 40% of the world's population. It encompasses major hubs of economic and industrial development, and some of the major arteries of global commerce. Over 100,000 ships transit the Indian Ocean every year, carrying two-thirds of the world's oil, half the world's cargo, and one-third of global container shipments. The quest for resources, is pushing the region towards the oceans, about which I will touch upon a little later.

4. This region also faces numerous challenges such as the presence of failed or failing states, wars, conflict, terrorism, including maritime terrorism, piracy, gun-running, human and drug trafficking, and illegal, unreported and unregulated fishing. The effects of climate change, resource scarcity, and extreme poverty further exacerbate the situation.

5. So as you can see, there are productive as well as disruptive forces prevailing in the North Indian Ocean; and these forces impact the maritime domain in primarily two areas, which are its security and its economy. Conflict Prevention, security of maritime trade and commerce, offshore oil exploration areas, ports and other important shore based infrastructure, combating maritime terrorism, thwarting piracy, smuggling, trafficking and illegal fishing; and mitigating the effect of natural calamities, are the primary endeavours on the security front. Alongwith other like-minded partners, India has been making concerted efforts at strengthening the security architecture

in the region through bilateral and multilateral engagements and exercises, supporting multilateral for a, such as the Indian Ocean Naval Symposium or IONS, Humanitarian Assistance and Disaster Relief, Non Combatant Evacuation Operations, coupled with anti-piracy and counter terrorism operations.

6. On the economic front, resource scarcity on land and the need for cleaner and greener energy is driving economic activity towards the oceans and seas, giving rise to the Blue Economy. Blue Economy, is best described as the integration of water-based economies, that is, those associated with inland waterways, seas and oceans; in a socially inclusive, environmentally sustainable and economically viable manner. The asset value of the oceans is pegged at 24 Trillion US Dollars, with an annual value addition of about 2.5 Trillion US Dollars. This economic value is accrued from maritime transport; submarine cables which form the backbone of global telecommunications; fisheries; aquaculture; oil and gas; marine tourism; shore based commercial activity; and emerging sources of energy such as tides, waves, currents, offshore wind and Rare Earth minerals obtained from deep sea mining.

7. What is often missed out, is the crucial role that Hydrography plays in the success of the Blue Economy. In fact ***Marine Spatial Planning***, which is the start point for the Blue Economy, is heavily dependent on well mapped seafloors and oceanbeds. It is basically the process of analyzing and allocating the spatial distribution of human activity in an ecologically sustainable manner. I am also aware of the ***GEBCO Project for Complete Seafloor Mapping*** by 2030, under the aegis of Forum for Future Ocean

Floor Mapping. It is a laudable initiative, and would require support from member states of the IHO, along with innovation in terms of development of technology and processes for gathering fairly accurate bathymetry. I understand that NIOHC has been debating and delving upon efficacy of crowd sourcing of bathymetry data, development of unmanned vehicles, employment of fleets of low maintenance platforms and various other methods. I believe this will drive further technological innovations in bathymetric data collection and development of inexpensive tools for charting purposes. This is also in line with the IHO vision.

8. The ongoing efforts to reduce human intervention by developing required infrastructure towards **e-navigation**, are also commendable. Hydrographic products will have to transform to incorporate flexible data formats, so as to increase interoperability. The IHO is progressing towards addressing this issue by developing S-100 data formats, which I am told is at an advanced stage of implementation. The challenges of migration from the current data formats to S-100 will be a task which requires co-ordination amongst Hydrographic Offices and NIOHC would be the ideal platform to steer the issue for this region.

9. I have also learnt that after having adopted a resolution on ***Realisation of Spatial Data Infrastructure in Hydrographic Community*** in Apr 2007, Hydrographic Offices despite being primary data holders have moved towards working out responsibilities, in accordance with SOLAS convention to distribution of Non-SOLAS products. As I understand, only 15 to 20% of the world's oceans have been properly and adequately charted. Thus the theme for last year's World Hydrography Day was very aptly set as '***Mapping Seas, Oceans and Waterways - More Important Than Ever***'. This according to me should be a concurrent activity in order to ensure that both SOLAS compliant and non-compliant products, benefit humankind. How IHO and Regional Hydrographic Commissions foster innovation to depart from traditional charting roles is a conundrum that must be solved.

10. Thus, the role played by the NIOHC is vital towards enhancing co-operation between member states in terms of navigational products, hydrographic surveys, nautical information, capacity building and the whole spectrum of modernisation efforts in the hydrographic domain.

11. India has a coastline of about 7500 kilometers and around 1200 islands. Charting them and providing regular updates is a formidable task. When other parts of the Ocean around us are taken into account, the task becomes that much bigger.

12. The theme for the World Hydrography Day 2018 is '***Bathymetry – the Foundation for Sustainable Seas, Oceans and Waterways***'. This is particularly apt as far as India is concerned, because we have embarked on an ambitious model of port-led development through the Sagarmala Project which will establish new ports and modernise old ones to link our coastal and island territories with the hinterland. We have identified 173 projects under the Sagarmala program which can be broadly categorized into Port Modernization, Port Connectivity, Port-led Industrialisation and Coastal Community development. Providing hydrographic and cartographic services for this project will be of paramount importance.

13. With our experience in hydrographic surveying and nautical charting, we had realized long ago that the expertise needs to be shared for ensuring safety of mariners at sea. India has had trade links with countries in the IOR since time immemorial, and in the seven decades after our independence, we have ventured into providing technical expertise and support in hydrography and cartography to other coastal states. The Indian Chief Hydrographer has apprised me about the efforts put in by the International Hydrographic Organisation towards capacity building for the countries, that do not yet possess full-fledged hydrographic capabilities, and we are a willing contributor towards assisting them. Our approach has been to provide training at the National Institute of Hydrography here in Goa, and assist in developing infrastructure and support hydrographic efforts. The usefulness of this model has been acknowledged by many countries.

14. I have attempted to list out various challenges that the world will face in the near future with respect to sustainable development, the Blue

Economy, challenges to achieving worldwide bathymetry coverage, the need for innovation and rapid absorption of latest technology, so as to achieve a higher degree of security, safety and economic progress at sea. I have seen the agenda for the meeting and am certain that the deliberations will be healthy and fruitful.

15. I have been made aware that in between your busy schedule, certain activities have been interspersed for you to get to see some parts of Goa, which is an International tourist hotspot. I wish you all a very fruitful and successful meeting, and a pleasant stay in India.

*Thank You.*