

CMEC - Maritime Knowledge Lecture Series
History, Archaeology and Future of Maritime Talents
in India

Lead Speaker - **Prof. Joy Sen IIT Kharagpur**

Special Remark: **Dr. Malini V Shankar, VC, IMU**

Chair: **Amb. Sudhir T. Devare, Chairman RAC, RIS**

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Background:

'The story of Indian Civilization' is the story of Global civilization. As the celebrated historian, Will Durant has said:

“India was the motherland of our race and Sanskrit the mother of Europe's languages. India was the mother of our philosophy, of much of our mathematics, of the ideals embodied in Christianity... of self-government and democracy. In many ways, Mother India is the mother of us all.”

Therefore, if India's impact on global civilization was so huge and so deep, then the networks of spread dissemination and outreach shaping a continuous making of global systems of culture, religion and sciences have been equally very powerful.

Whether it was communication or travel through land-routes or through the seas and oceans, India's marine navigation-driven networks have been outstanding, continuous and sustained. India's marine connections have been even more profound and vast connecting dots of the world a few 1000 years before the Buddha and the Christ eras.

Ancient Maritime Traditions

India's maritime traditions goes beyond the Sindhu-Saraswati Civilization, whose first ripples were seen in Bhirrana and Rakhigarhi (8000 – 5000 BCE), Mehrgarh I, II, III and IV (6000 – 4000 BCE) and the later cities of Lothal, Mohenjodaro, Harappa and many more (3500 – 1500 BE).

The French I-SPOT Satellite first discovered the other paleo-channel of maritime communication and settlement ribbons, often identified as the Ghaggar-Hakkra riparian linkage, of which the Saraswati river is still evident today. It originated in the Shivalik Himalayas and still flowing through the palaeo-channel of Yamuna, and still existing. Even today, it is seen as a tributary of Ghaggar river of Haryana state of India.

And even today, the Saraswati river channel course is dotted with archaeological and religious sites dating back to antique Vedic periods having settlements of KapalMochan, Kurukshetra, Thanesar, Brahma Sarovar, Jyotisar, BhorSaidan and Pehowa, thereby linking Indus Valley civilization to the Western Indo-Gangetic plains.

A new history of the Indian sub-continent is therefore unfolding based on river linkages, maritime history and growth pattern of civilization in India. In this connection, the following works are of significance.

- PadmaShriDr. Michel Danino, Michel (2010) of IIT Gandhinagar works on “*The lost river : on the trail of the Sarasvatī*”

- Prof. Anindya Sarkar of IIT Kharagpur, and his team (2016). "Oxygen isotope in archaeological bioapatites from India: Implications to climate change and decline of Bronze Age Harappan civilization" in the *Scientific Reports*.

With the use of Lidar technology, Photo-luminescence studies, new chapters of marine histories are opening up. The old 1935 Yale-Cambridge expedition in the Narmada Valley by Dr Helmut de Terra together with Pere P. Teilhard de Chardin have pushed the current works on Marine Archaeology, glorifying new chapters of Indian maritime history.

The ancient mariners funded by the most antique mariners, the Lion-King and Leaf-folded Pallavas, and followed by the Satavahanas, the Cholas, the Rashtrakutas, the Pandiyas and many more, explains from dissemination of the Tamil Sangam and the mighty influence of its patron Sage Agusta Nambiar, and Kumar Scanda Swami, whose presences are found all over Indonesia.

The maritime linkages continued with the first half of the spread of Islam from Arabia to the east and the west, with the Abbasids in Baghdad taking the torch of knowledge from India and Persia (via the Persian Gulf) to the Emirate of Cordova (Spain and Portugal).

Indian mathematics and the gems of positional astronomy and navigational sciences civilizing the whole of Western Europe. A recent book by William Dalrymple, 'The Golden Road' amplifies this matter, mainly in the last three chapters.

After the Fall of Granada in 1492, the Spanish Armada became the lifeline of Colonial quest. With Christopher Columbus discovering the Paradise or INDIA as WEST INDIES, and then, Vasco Da Gama finally discovering her as the EAST INDIES, India's marine history entered the last 500 years of Marine history, of which the last 300 years, where Imperial, Colonial and Invasive.

India's gift towards Positional Astronomy, Navigational and Marine Cybernetics

Beyond and behind the huge galaxy of Indian maritime history, there is an inner and embedded system of knowledge that India has drawn from the deep observational and empirical knowledge of stars, constellations, and their movements, best guiding the navigation. India's Astrolabes were the source of mathematics and geometry of forms.

- What appears so modern now is the new SCIENCE OF MARINE CYBERNETICS.

- The science of the PRECESSION OF THE EQUINOX and that of ARCHAEOASTRONOMY are two great systems. The master sources are KALPA SUTRAS in the 6 fold Vedangas, of which the SURYA SIDDHANTA and the later Kerala School of marine mathematics, as two of many.

Today, the gravity of intensity of Indian Marine Knowledge System is far more relevant as it is deeply intertwined with predictive and regenerative deep learning techniques of machine analytics (AI) and this is indeed a great truth in the making.



Lecture Thematic: History, Archaeology and Future of Maritime Talents in India

Focus: Highlight the antiquity and modernity of our marine science and history – what, why and how?

Discussion Points:

Unfolding the history of India's marine heritage and marine scientific contribution to International networking and globalization: THE WONDER THAT WAS INDIA
 India's future contributions in AI driven Marine Cybernetics: THE WONDER THAT IS INDIA.

Lessons for Industry-Academia interface under National Education Policy (NEP 2020) and National Credit Framework (NcrFr 2022) to focus on Maritime subjects and capacity building Opportunities and marine specialisations needed to be aligned to achieve our necessary maritime goals.

Lecture Takeaways

- Unraveling the history, archaeology and *India's scientific maritime contributions* of the past, an inspiration to our younger generation.
- How the most ancient is still the modern in sciences, and how we can garner and sharpen the edges of holistic academia through the *Integrated Knowledge Systems of India*.
- Unfolding the *requirements of the future maritime talent in India*, desired specialisations and opportunities, in an effort to re-establish India as a Maritime super-power, as she existed in her glorious past.