



"A sailing ship is no democracy; you don't caucus a crew as to where you'll go anymore than you inquire when they'd like to shorten sail. - Sterling Hayden

Blue Economy-Wave 50

(Series on "Blue Economy" By Capt. Gajanan Karanjikar)



Capt. Gajanan Karanjikar, Blue Economy Social Activist & Multi Modal Logistics Expert

Microalgae and Biotechnology:

Primary producers in aquatic environments, microalgae are a vast biological resource in terms of both volume and variety, with tens of thousands of species producing more than 20 billion ton of organic matter per year. Microalgae typically grow far more quickly than land-based plants and can be easily cultured in both freshwater and seawater, or in any environment with light energy. They possess great potential as a material in bio industry, allowing for low-cost production of industrially useful high molecular weight substances such as proteins, fats,



sugars, and pigments as well as substances with specific physiological functions.

Taking advantage of microalgae's usefulness will first require mass culturing through artificial purification and isolation. Microalgae culturing is essential not only for phycolgical research but for basic science and understanding of aquatic ecosystems. Mass-cultured microalgae are also the focus of active use and development in a variety of industry areas as a source of food for marine and livestock forming and a material in fertilizer, functional health supplements, food additives, pharmaceuticals, industry, wastewater treatment, atmospheric purification, and bioenergy.

An invisible biological resource war is now under way around the world. Through

active biotechnology research, microalgae may yet become not only a subject of academic interest but a high value-added bio industry resource for Korea's future through development of high-functioning antioxidants, pharmaceuticals, health foods, functional cosmetics, and bioenergy.

Functional Materials with Marine Organisms

Great strides have been made over the past 30 years in research into functional materials obtained from marine organisms, particularly in the worlds advanced economies. The isolation of more than 10,000 new materials already and identification of their structures and characteristics have changed the very concept of organic matter in hitherto land organism-based natural product chemistry. The powerful bioactivity and distinctive reaction mechanisms found in many functional materials obtained from marine organisms have contributed greatly not only to medicine and pharmacology, but also basic and applied research in fields related to biology, ecology, and biochemistry. In industry terms, the recent registration of numerous patents for bioactive substances and functional materials derived from marine organisms has led to development of pharmaceuticals, health supplements, functional cosmetics, and industrial products

Marine Bioenergy Production:

Biomass is currently being considered

alongside nuclear power and solar energy as an energy source for the future. Particularly high hopes are being pinned on the use of theoretically unlimited solar energy and biomass—an aggregate of that solar energy—as a new energy resource. The total biomass of the Earth is estimated to be 1.0 x 10¹² ton of carbon equivalent, a total that corresponds to 100 times the current annual energy consumption and five times the amount of petroleum deposits.

As a peninsular country surrounded on three sides by water with vast areas of ocean, India is in a position to take advantage of its situation by cultivating vast amounts of large seaweeds that grow by absorbing solar energy and nutrients in seawater. In addition to using these as energy resources, the country can also recover useful substances from them, including fertilizers, feed, and chemicals. Algae in particular grow biologically by fixing carbon dioxide from within seawater, which means that they can be used to prevent the CO₂ contamination that is currently becoming an issue, as well as several problems related to fossil fuels and nuclear energy. Currently, the costs of producing energy from marine biomass such as algae and microalgae are too high for it to compete with petroleum and other fossil fuels in production cost terms. The fact remains that production costs will be significantly higher than those of petroleum even if the prices are rationalized somewhat through energy production system improvements.

(To be continued...)

Yet another infrastructure for Gujarat when Prime Minister Narendra Modi flags off Ro Pax service on November 8th

NEW DELHI
Sagar Sandesh News Bureau

After the sea plane service from Ahmedabad to Kevadia last week Prime Minister Narendra Modi will unveil yet another infrastructure for Gujarat when he will flag off Ro Pax service on November eighth between Hazira in South Gujarat to Ghogha in northern part of the state a distance of about 360 Kilometers

Benefits: reduced travel time, fuel savings, lower maintenance cost

There will be several wide-ranging benefits of the Hazira-Ghogha Ro-Pax ferry service. It will work as a Gateway to South Gujarat and Saurashtra region. It will reduce the distance between Ghogha and Hazira from 370 Km to 90 Km. The reduced cargo travel time from 10 to 12 hours to about 4 hours will result in huge savings of fuel (approx 9000 litres per day) and lower the maintenance cost of vehicles drastically

Prime Minister Narendra Modi will inaugurate the Ro-Pax terminal at Hazira and flag off Ro-Pax service between Hazira and Ghogha in Gujarat on November 8th via video conferencing. Union MoS for Shipping



Ro pax service

Mansukh Mandaviya and Chief Minister of Gujarat will also be present on the occasion.

The Ro-Pax Terminal being inaugurated at Hazira is of 100 meters length and 40 meters width, with cost implications of approx. Rs. 25 crores. The terminal has wide ranging facilities including administrative office building, parking area, substation and water tower etc.

The Ro-Pax Ferry Vessel 'Voyage Symphony' is a three decks vessel with DWT 2500-2700 MT, with displacement of 12000 to 15000 GT. It has a load capacity

of 30 trucks (of 50 MT each) on the main deck, 100 passengers cars on the upper deck and 500 passengers plus 34 crew & hospitality staff on the passenger deck.

Schedule and capacity

The ferry service, while making 3 round trips/day on the Hazira-Ghogha route, would annually transport about 5 lakh passengers, 80,000 passenger vehicles, 50,000 two-wheelers and 30,000 trucks. It will reduce fatigue of the truck drivers and enhance their incomes by giving them more opportunity to do extra trips.

It will also lead to reduction in CO₂ emission by approximately 24 MT per day and net saving of approximately 8653 MT per annum. It will give an impetus to the tourism industry with ease of access to Saurashtra region and lead to creation of new job opportunities. With the onset of Ferry services, the port sector, furniture and fertilizer industries in Saurashtra and Kutch region will get a big boost. Eco-tourism and religious-tourism in Gujarat, especially in Porbandar, Somnath, Dwarka and Palitana will grow exponentially. The benefits of enhanced connectivity through this ferry service will also result in increased inflow of tourists in the famous Asiatic lion wildlife sanctuary at Gir.