



## Inter-island Fishery Resources of Indian Ocean: A budding prospect for the Indian Seafood sector

Deepitha R. P<sup>\*1</sup>, B.B. Nayak<sup>1</sup>, A.K. Balange<sup>2</sup>, K. Saravanan<sup>3</sup> and Ajina. S.M<sup>3</sup>

<sup>1</sup>Department of Fish Processing Technology, ICAR-Central Institute of Fisheries Education, Versova, Mumbai-400061, Maharashtra

<sup>2</sup>ICAR-IARI, Dirpai Chapari, Assam-787034

<sup>3</sup>Division of Fisheries Science, ICAR-CIARI, Garacharma, Port Blair, Andaman and Nicobar Islands-744101

<sup>4</sup>ICAR-CIARI Regional Station, Minicoy Island, Fallessery, Lakshadweep-682559

### Abstract

The oceans describe our mother planet as blue and make her alive. The living resources of the oceans contribute immensely towards the development of global seafood sector. Seafood is well known for its health benefits, with the presence of quality protein, essential amino acids and presence of omega 3 fatty acids. These aquatic resources also form reserves of several bioactive compounds possessing excellent pharmaceutical and medicinal values. Hence, the presence of oceanic reserves of a country significantly influences its overall GDP. Indian Ocean is the third largest ocean among all the five oceans of the world, with unique oceanic currents and upwelling patterns making it ecologically diverse. The only ocean to be named after a country, Indian Ocean resembles an embayed ocean bordered by landmasses along three sides along the Indian peninsular. This distinctive feature of the Indian Ocean geologically, has made her a rich reserve of fishery resources. The inter archipelago of Indian Ocean consist of numerous islands with low cays of coral sand, reefs and high islands that harbours huge diversity of marine organisms. This review discusses about the key island nations along the Indian Ocean, sharing potential seafood resources with our country and could become a leading collaborator for boosting the seafood sector globally.

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### \*Corresponding author:

[deepitha@cife.edu.in](mailto:deepitha@cife.edu.in)

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### Introduction

The present scenario has witnessed several devastating natural calamities on earth. From the effect of burning issues of climate change, stagnant capture fisheries production, and competition for natural resources, it becomes the need of the hour to focus on ensuring food security for the growing population. This protonated, science to focus more on the food consumed rather than the produced. Every food component is unique with its own nutritional composition. Globally checked data's regarding the top traded food commodities across the world, indicate Seafood at its peak position thus signifying the relevance of the item internationally. Fish and shellfish exports from developing countries have overtaken the export of coffee, rubber, cocoa, tea, tobacco, meat, and rice combined in terms of value (FAO, 2014). The enormous health benefits possessed by consuming seafood pertaining to its easy digestibility, abundant reserve form of amino acids, omega 3 fatty acids, vitamins and minerals has titled it as one of the top traded food commodity in the world. However, non-uniformity in consumption pattern of fish and shellfishes has resulted in considerable pressure over certain fisheries. Fishing has not only reduced the targeted species populations but also altered the marine food webs, thereby creating cumulative impacts on marine eco

systems, undermining the productive capacity of fisheries. This created considerable pressure on the total productivity of capture fisheries, and hence came the need of sustainability in the fisheries sector by regulating the over exploited catches and utilisation of underutilised resources of the ocean. Inter-island resources across Indian Ocean have tremendous scope for better utilization of this Aquatic fauna sustainably for humankind.

### Indian Seafood

Among the large fishery resources distributed globally, India is blessed with a rich maritime heritage having a long coastline of 8190km and an EEZ of 2.02 million square kilometres. (Pillai and Ganga, 2010). According to Marine product export development Authority, the Indian seafood export touched an all-time high value of US \$ 7.38 billion during the year 2023-24. (MPEDA, 2024). The major importers were USA and China with frozen shrimp retaining the top position, earning US \$ 4881.27 million in the total seafood export from the nation. White leg shrimp and the Black Tiger shrimp exports were the highest in the shellfish category. Frozen fish ranked second and the non-edible dried item, fish and Shrimp meal & feed were the third most exported seafood commodity from our country. This rising demand for the seafoods based on their nutritive and sensory reception factors have raised considerable pressure on capture fisheries globally. On the other hand, islands like Andaman and Nicobar and Lakshadweep, which have huge resource potential can, become the main contributory hands in raising the seafood export from the country.

### Island ecosystems

India is endowed with two unique pristine marine aquatic systems which are distinctly different from the geographical, social and cultural perspectives. The discrete geographical location of both the ecosystems has put remarkable changes in the rich ichthyofaunal diversities of the island. The exemplified resources of the islands have faced considerable pressure over the past few years due to the rising anthropological activities in the island ecosystems. Thus, it is essential to focus on the ecological sustainability by responsibly conserving the resources of the nation.

Andaman and Nicobar Island is a marvellous piece of paradise on globe, with its pristine nature. These islands comprise of large marine ecosystems and long coastline which constitutes about 24% of the total Indian coastal line. (Advani et al., 2013). The diverse resource potential of the island is due to the vast stretches of open ocean, magnificent coralline ecosystems, etc. which is inhabited by large number of pelagic, oceanic, demersal and reef associated fishes. The islands have diverse marine resource potential, constituting carangids, mackerel, silver bellies and anchovies constituting 22% of the total fish landings of the island. (Dam Roy and George, 2010) Sardines, anchovies and perches form another major catch contribution of the island. Both the demersal and

pelagic fish stocks have been targeted in the island. Since the islands have a huge and diverse coral ecosystem, molluscan fishery has an important role and place in the island. Commercially important groups like *Pinctada sp*, *Perna sp*, edible oysters *Crassostrea* and *Saccostrea*, giant clams (*Tridacna sp*), Chunks (*Xancus sp*), Nautilus, cowries (*Cypraea sp*) and cone shells (*Conus sp*) are common in Andaman waters. Globally they have versatile applications ranging from edible meat to industrial and jewellery uses. (Advani et al., 2013). During the early 80's the prawn fishery received attention in the island. Silas et al (1983) reported 19 species of penaeid prawns of various genera *Penaeus*, *Metapenaeus* etc. At present the aquaculture and seed collection is given good attention with the establishment of two bio secure tiger prawn hatcheries by MPEDA. Similarly crab fisheries (*Scylla* and *Portunus*) and lobster fisheries (*Panulirus* and *Thenus*) also had gained much popularity. The common fish species landed in the island include reef associated species like groupers snappers and perches. Blue (*Lutjanus kasmira*) and golden striped snapper (*Lutjanus lineolatus*) were reported as high value species of the island while the Serranidae family were given less importance. (Maricham, 1974). Tunas and elasmobranch fishery are also major catch in gillnets and longlines. The fishery of the island is restricted only to the local demand and consumption and the export markets get restricted to the nearby ports of Chennai, Vizag and Kolkata. Andaman has a projected fish potential of 1.48 Lakh tonnes which accounts to 3.8% of our country's total Fishery potential. (ANIDCO, 2023)

With the establishment of the international airport of Andaman and the close proximity of the island to the South East Asian countries, the island fishery has a long way to go. The huge potential of the island in terms of marine fishery resources have to be given a diversified thought for exploitation and utilisation. Rather than limiting towards fresh form of consumption, the resources need to be presented in more appealing form to the consumers. This will in turn raise demand for the underutilised resources, which normally gets rejected due to their bad appearance, colour, off flavour etc.

### Lakshadweep Islands

The union territory of Lakshadweep islands consists of 11 inhabited islands and several uninhabited islands scatterly distributed along 08°00' and 12°30'N and longitude 71°00' and 74°00'E (Ayyappan et al., 2010). The island is 200 to 400 km far away from Kerala Coast. The uninhabited islands also possess very diverse resources. Lakshadweep is the only coral reef atoll of the country with lagoon spreading about 4200 square kilometre, territorial waters 20,000 square kilometer, EEZ 4 Lakh kilometer square and coastline of 132 km (Department of fisheries Lakshadweep). Livelihood opportunities of the islanders are very limited. Mostly the people of the island rely upon the natural resources and hence coconut cultivation served as principle source of economy in the past (Vinay et al., 2017).

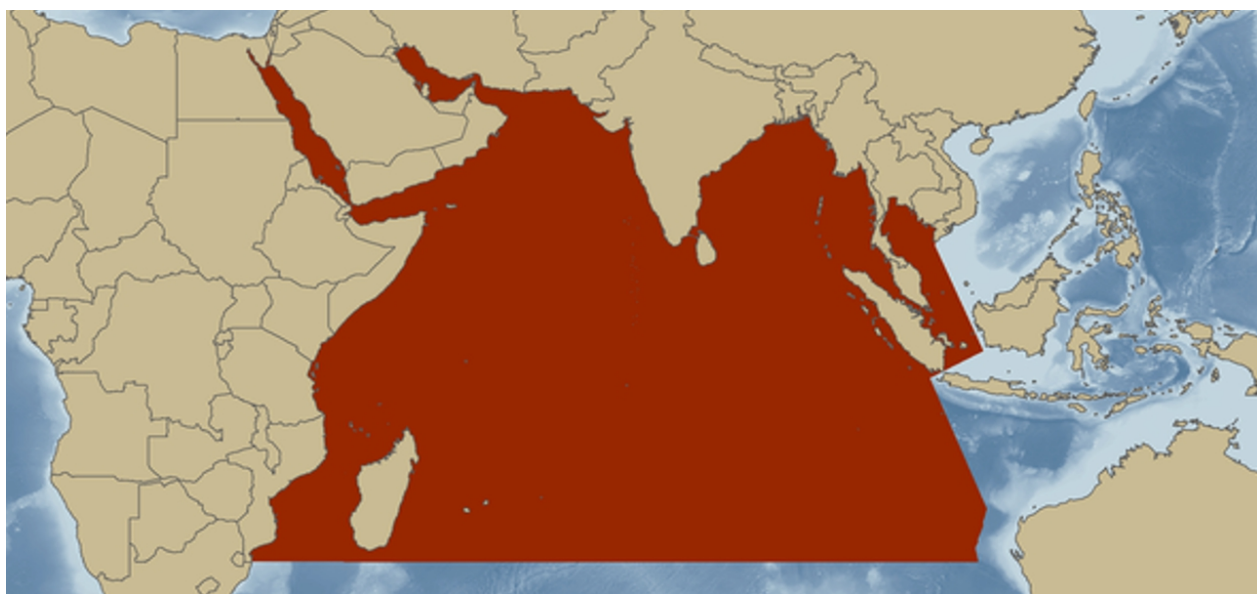
Fisheries of the island contribute employment opportunities to 60% of the population with 13% directly involved in the fisheries activities (Zacharia, 2007). Fisheries of Lakshadweep is broadly categorised into three groups of tuna fisheries, non-tuna fisheries and marine ornamental fishes (Vinay *et al.*, 2017). Owing to the international importance of tuna fisheries, Lakshadweep is a boon for the entire nation constituting a versatile platform for the tuna landings. Tuna are the fourth major international traded commodity contributing 8% to the international fish trade in terms of value. (Anon, 2014). About 19% of the global tuna catch is from Indian ocean (Pillai and Ganga, 2008). The island has a huge potential of tuna and allied fisheries. Major landings include yellow fin tuna, skipjack, kawakawa, frigate tuna, and big eye tuna. The primary markets for tuna internationally are Japan, USA and European union. (Vinay *et al.*, 2017). Major forms of tuna products traded internationally include sashimi, canned, chilled, frozen and smoked. The maritime history of the island has clearly depicted the evidences of early settlement and shipwrecks. The island remained the temporary stay plot and landmarks for the navigators according to the marine archaeological explorations and excavations (Tripathi, 1999). Other major landings comprise seer fish, kuluval, dolphin fish, rainbow runner, gar fish and half beak. Species of *Lutjanus* is yet another group playing vital role and contributing immensely towards the commercial landings of the island. *Lutjanus gibbus*, *Lutjanus bohar*, *Epinephelus sp*, families of Lethrinidae, Gerridae forms major landings (Department of fisheries Lakshadweep). Lakshadweep fisheries raised its flag in 1980s with the large scale introduction of mechanised and motorised boats fitted with bait tanks. (Mohan *et al.*, 1985). The main fishing method practiced in the islands include pole and line fisheries (Vinay *et al.*, 2017). 92.8% of tuna fishing is done using pole and line

gear followed by troll line (3.3%) drift gill net 2.1% and handline 1.9% (Vinay *et al.*, 2016). Most of the tuna landings are directly utilized for the preparation of the traditional delicacy of island called, Masmin. The unique method of pole and line practised for the tuna harvest and the smoked and dried tuna (masmin) is an exception to the Lakshadweep islands and hence can contribute immensely to the seafood export of the country.

### Inter islands

Indian Ocean is designated conventionally at an area between 25°N and 40°S and between 45°E and 115°E (Qasim.,1998). Meridionally, the IO extends from Gulf of Oman and the head of the Bay of Bengal in the north to 40° S and zonally, from the east and south African coasts in the west to the coastlines of Myanmar, Thailand, Malaysia and western Australia in the East (Wafar *et al.*, 2011). The Indian Ocean spreads over 74.92 million km<sup>2</sup> (29% of the global ocean area) with the average depth of 3873 m and the maximum depth of 7,125 m (Java trench).

Several attributes differentiate the Indian ocean from other oceans. Primarily it is landlocked to the north and resultant differential heating of the landmass and se give rise to wind circulation that gradually reverse the direction and entrains a corresponding reversal in surface circulation twice a year. This monsoon effect has significant effect on the climatology thereby influencing the marine productivity in the ocean. About 30% of the global coral reef cover (185,000-200,000 km<sup>2</sup>) is distributed along the coast of IO countries (IOGOOS, 2002; Keesing and Irvine, 2005). Therefore, our neighbouring nations along the ocean share a vast amount of resources with us and hence the knowledge and communal associations with these countries can uplift the global seafood sector of future, recognized in the name of Indian ocean.



Indian Ocean Region

(Source: Wafar *et al.*, 2011)

## Sri Lanka

India's maritime location reveals the close proximity to different islands other than Lakshadweep and Andaman which forms part of the Nation. The southern most part of India is having close proximity to the island Nation Sri Lanka. India and Sri Lanka shared the closest and influential neighbourhood relations in the different aspects like territorial extent, population size, economic strength, military might and diplomatic standing. Although certain conflicts due to strategic imperatives and national interests happened, the bilateral relations between either nations had never been shady (Manoharan & Deshpandey, 2018).

Fishery sector of Sri Lanka plays a vital role in the countries Social and economic life. The sector contributes to around 2% of nations GDP (FAO, 2006). The aquatic resources are mainly obtained from the 3 sub sectors of coastal waters, oceanic and inland forms. Marine fish catch has increased to a total of 90 per cent, out of which the coastal fish catch itself reaches to 60 per cent. Traditionally, simple canoes were operated in the inshore waters with outriggers, later on canoes powered by outboard motors came into picture. About 610 species of coastal fishes were reported from Srilankan waters, which comprised of species such as *Sardinella spp.*, *Amblygaster spp.*, *Rastrelliger spp.*, *Auxis thazard*, *Anchoa commersonii* and *Hirundichthys coromandelensis*. Of pelagic forms and demersal groups reported species such as *Lethrinus spp.*, *Trichurus spp.*, *Caranx spp.*, species of skates and rays, *Cynoglossus spp.*, *Lojiniusspp* and *Tolithus sp.* another major catch is constituted by *Katsuwonus pelamis* and *Thune's albacores*. Also 60 species of sharks have also been reported from oceanic waters off Sri Lanka. The main species reported are *Carchanious falciformis*, *C. longimanus*, *C. malanopterus*, *Alopices pelagicus*, *Sphyrnee zygaena* and *S. leveni* (FAO, 2006). Most of the landed catches are used for chilling, curing and drying. However over recent years the country has come up with the export of chilled and frozen tuna, shrimp, lobsters, shark fins and sea cucumber. Palk Bay and Gulf of Mannar which forms transboundary area within waters off India and Sri Lanka is known to possess richest coastal regions of Asia harnessing a variety of marine flora and fauna. Although, there exist maritime agreements of 1974 and 1976 between the two neighbours, there are certain irritants among both. The Sethusamudram Shipping canal Project undertaken by India to link Plak Bay with the Gulf of Mannar through shipping canal is one of the main issue that exist between either nations. The other main issue is the status of Katchchativu, a small barren island in the Palk Bay area. Through the 1974 agreement, India agreed to Sri Lanka's sovereignty over Katchchativu but with some safeguards to its Indian fishermen through Article 5 (IPCS, 2017). However, the marine resource potential that both nations share in common are huge and can be a leading share of seafood export, if certain treaties for settlement are placed forward by both the governments for the global fisheries growth.

## Myanmar

Bilateral relations between Myanmar and Republic of India encompass the political, economic and socio-cultural relations that exist between the two Asian countries. Fishery plays a vital role in the nations overall GDP and almost 3 million people (about 5% of the population) are directly employed in the fisheries. (Soe, 2008). The marine fishery resource of the nation shows diversified potential with complex ecosystems along the coastal areas. Myanmar is ranked the fourth position among the Asian countries showcasing one of the largest spread mangrove areas. (FAO/UNDP, 2003). As far as Myanmar is concerned; fisheries contribute tremendously to the countries culture and economy. Fish accounts for half the countries animal source food and is consumed second only to the rice by the Myanmar population community. The enormous health benefits obtained by fish consumption are seriously taken care by the population of the country owing to 12% of monthly expenditure of average household (Daphne, 2005). The total fishery production in Myanmar was 2.58 million metric tonnes in 2005-06. (Department of Fisheries Myanmar, 2016). Marine fisheries was composed of both onshore fisheries, inshore fisheries and offshore fisheries. Inshore fisheries are small scale but contribute for the high value species like lobsters, shrimps, groupers, mud crab, clams etc. Export of fish and fishery products are done in live form, fresh frozen or chilled and processed. Other than fresh form, domestic fish consumption is in the form of fish paste and sauce, smoked and dried form. The seafood export from Myanmar generally comprised of catches constituting high value products like Black tiger prawn (*Penaeus monodon*), Giant fresh water prawn (*Macrobrachium rosenbergii*), Pangasius (*Pangasius hypophthalmus*), Tilapia (*Oreochromis niloticus*) and seabass (*Lates calcarifer*) (Van der & Van Duijn, 2012). The official reports indicate that the fisheries constitute to around 6% of the population's livelihood (Department of Fisheries Myanmar, 2016). Hence, this sector occupies an important place in Myanmar's economy and culture. According to the DOF, 2015 the top ten species according to values were rohu (US \$ 60 mln), live mud crab (US \$ 49 mln), *P monoceros* (US \$ 23 mln), etc. In 2017, crab took account for about 33% while shrimp more than 70% of the total export. Fresh whole fish, including both marine and fresh water were mainly exported to Thailand, China and Singapore and on the other hand frozen whole fish fetched huge demand in Saudi Arabia, Singapore and China (Tint et al., 2020), the Relevant attention in the areas of fish product development and value addition can raise the potential of the fishery resources from this country to a global level. The deep water Sittwe Port, located in the Rakhine State of Myanmar offers a significant connectivity advantage for the cargo to reach Kolkata and North-eastern states of India Bypassing Bangladesh (Drishti, 2024). The recent approval for India Ports Global Ltd to take over the operations of Sittwe port of Myanmar will be a pipe dream for the



Indian seafood export to cross another international boundary.

### Thailand

Thailand is a South east Asian country having close proximity to India. It encompasses diverse ecosystems of huge forest covers, fertile rice fields, broad plateau of north east and rocky coast along the southern peninsula (Jane, 2020). India and Thailand shares a long coastal border as Andaman and Nicobar islands share a maritime border with Thailand along Andaman sea. There exist socio-cultural similarities between either nation since ancient times. The close proximity of South East Asian countries with Andaman and Nicobar Islands, India (1009 km) adds the advantage of trade services to and fro within the counties.

Fisheries form an important livelihood for the nation and the systematic strategies adopted by the fisheries administration has made the Thailand's fishery potential at its peak. Both culture and capture fisheries contribute immensely to the countries economic growth, Aquaculture production reaches 0.91 million tonnes and Wild capture fisheries 1.69 million tons (Department of Fisheries Thailand., 2020). Thailand's coastal habitats are biologically complex, influenced by tropical rain forest, monsoon winds, tidal currents and river discharges building intricate circulation patterns including downwellings and upwellings. Also, forming home to a diverse number of marine flora and fauna along the abundant stretches of coral reefs, seagrass beds and Mangrove ecosystems (Panjarat, 2008). Major export items include canned tuna and shrimps which have huge demand across USA(24%), Japan(19%) and Asian(8%) countries. (Department of fisheries Thailand 2020). Important pelagic fish caught along the Gulf of Thailand include mackerels (*Rastrelliger spp*), Scads (*Decapterus spp*), Sardines (*Sardinella spp*), anchovies (*Encrasicholina spp* and *Stolephorus spp*), King mackerel (*Scomberomorus spp*) and tuna (*Thunnus spp* and *Euthynnus spp.*) (Eimsa-Ard & Amornchairojkul.,1997). The major fishing areas of Thailand include both Gulf of Thailand and Andaman Sea together contributing tremendously to the overall fisheries potential of the island. As neighbours sharing the Andaman Sea as a maritime boundar, free shipping flow through the Malacca Straits is a strategic priority for India and Thailand. The first ever naval exercise in the Andaman Sea in sea in September 2019, with Singapore's participation, naval cooperation between Delhi and Bangkok has increased. (ISAS, 2022). Hence, the responsive relationships between either nation is a way forward for the Indian Seafood sector to grow through along with thus partnership.

### Indonesia

Indonesia is known to be world's largest archipelagic country comprising of 17,504 islands and a long coastline measuring 99,093 km. The country lies strategically between the two oceans vis Pacific Ocean and Indian ocean (Ifan, 2017). Indonesia's marine geography is characterised by its unique bays, shelves,

seas and other water bodies with an EEZ area of about 2.7 million km square (NSOC., 2018). Indonesian seafood is largely contributed by tuna with priority species like skipjack (*Katsuwonus pelamis*), yellow fin tuna (*Thunnus albacore*), with big eye (*Thunnus obesus*), albacore (*Thunnus alalunga*), big eye (*Thunnus obesus*). The total export value of the tuna product reached approx 760 million USD in 2013 which constituted to about 18% of total Indonesian fishery products exported by value (MMAF, 2015). Crustacean fisheries dominated by shrimps and crabs served as other top traded seafood commodities from Indonesia. Indonesia was the second biggest exporter of preserved/processed crab following china (Fahmi et al., 2015). As a part of reef fish food trade, Indonesia is one among the largest exporter of both live and dead groupers. (Khasanah et al., 2020). The two countries entered into a comprehensive strategic partnership in 2018 and have engaged in bilateral naval exercises, Samudra Shakti since 2018 (Sahima, 2018). India and Indonesia have a distance of only 80 nm between each other, from the Southernmost tip of India i.e. Indira point of Andaman and Nicobar Islands to Banda Aceh in Indonesia. The strong bonding with this nation can help boost India's maritime policy in several ways for the port infrastructure development, to aid the concept of Freedom of Navigation (FoN) and also to aid economic development in the Bay of Bengal.

### Value addition and value Added fishery products from the Marine Archipelago of India.

Apart from the burning issues of global warming and climate change creating negative impact over the oceans of the world, over exploitation of certain fisheries has further worsened the diversity and species richness of the world. The huge demand for the resources on one side and the corresponding depletion of the resources on the other hand, have certainly imbalanced the marine ecosystem. Effective utilisation of existing resources in a better form to create demand among consumers without disturbing the sensitive aquatic biodiversity is the ideal way to justify the present problem.

Most of the fish harvested in the Andaman Islands are consumed in fresh form and only a very few are processed into ready to cook and ready to eat form. While changing from the subsistence fishing from ancient days by the indigenous tribes to the commercial fishing followed in the present days, several changes have taken place over the time. Though the tuna fishery is one of the highest valued seafood commodities in the international market, its utilisation trend is very limited in the island. Value addition of these resources, where the fresh fish is transformed into diversified products based on the consumer's preference can solve this issue of underutilisation.

Sashimi grade tuna, a major dish in Japanese cuisine (Sashimi is a Japanese term which means thin slices of fresh raw meat) is a high price commodity fetching a price of \$15-16/Kg in International markets with

Europe and USA being the major importers. India also have a huge contribution for the export of tuna and allied fisheries. (MPEDA 2018). Northern Blue fin tuna (*Thunnus orientalis*) in its fresh form and with size more than 25 kg is the most demanded species across the globe. Tuna and allied fisheries also have a huge potential in the island, but the demand pattern of the same is very limited. The exploratory long line survey conducted by FSI estimates that the island has world's richest tuna stocks. In Andaman waters the tuna resources can be broadly classified into the oceanic and coastal groups. A few of the abundant resources include species like long tail tuna (*Thunnus tonggol*), oriental bonito (*Sarda orientalis*), frigate tuna (*Auxisthazard*) and dog tooth tuna (*Gymnosarda unicolor*). High value species like yellow fin tuna (*Thunnus albacares*), skipjack tuna (*Katsuwonus pelamis*) and big eye tuna (*Thunnus obesus*) are found in the oceanic region. In spite of these benefits Pillai and Abdussamad 2009 accounted for only 2% tuna landings out of the total marine catch of the island. But on the other hand islands like Lakshadweep also contribute largely to the tuna catch in the country. Fishermen of the Lakshadweep islands, mainly use pole and line to harvest tuna which is normally consumed in fresh form or used for masmin preparations. Tuna has been processed in a number of forms like loins, fillets, steaks, medallions, blocks etc. ready to eat forms tuna is utilised for the preparation of sausages, cutlets, pickles, canned products etc.

Besides this, processing plants of India target quality products and are involved in several pre-processing operations of filleting, steak preparation, peeling, beheading, deveining which finally raise the end value of the products.

Raw fish that is modified into different forms that can attract consumers in terms of appearance and ease of handling is a type of value addition. This also includes mince and mince-based products like fish fingers, fish balls, sausage, etc. Continental foods like, fish burgers, patties and salads are products that can attract more of foreign consumers. Apart from this surimi and surimi-based products is another appealing product prepared from fish. In global scenario, Alaskan pollock is the single most dominant species contributing highly to the surimi industries around the world. The price of surimi in international markets reaches up to Rs. 500/Kg of surimi (Raghuram and Asopa, 2008). India exports frozen blocks of surimi (10 kg each) prepared from lizard fish, big eye and reef cods wrapped in polythene bag and master carton to different countries. Islands have a high scope for development of surimi and surimi based products as there is abundant catch of perch species. Lutjanidae, Serranidae and Lethrinidae family became important export item to South East Asian countries from the island. (Mustafa et al., 2001) Pink perch (*Nemipterus japonicus*), croaker and mrigal are candidate species for surimi manufacture having white meat. All these species body composition indicate lower fat content and light colour which ideally suits for the surimi manufacture. So, two

marine archipelago of the nation, with the diversified perch fishery inhabiting the pristine waters have immense potential in the area of value added fishery products. Also, with the communal relationship with the neighbouring nations across Indian and foreseeing their resource potential, the seafood trade can change the existing phase of growth towards an upward stretch. It's only a matter of interest that needs to be taken for initiation of this act.

## Conclusion

Future of an event can be positively manipulated, with appropriate measures taken in the present. The archipelago of Andaman and Nicobar and Lakshadweep islands has tremendous scope for improvement as far as the aquatic resources and its exploitation is concerned. By understanding the value of these pristine islands and scope for its development, relevant measures need to be undertaken regarding the post-harvest utilisation of the fishery resources. Jointly with the contribution of the fisherfolk, fisheries administration and scientists, the marine resources of the can be utilised effectively. The proper utilisation of resources, will generate alternative livelihood source for the fisherfolk thereby improving the living standard of the people there. With this background, it is very much essential to hook an interest to grab the real value of marine life of the ocean. Let the two islands of our country along with India having building a pleasant Inter-islands relationships with other neighbouring nations, be the mask for the "blue revolution" in our country. Alfred Thayer Mahan the famous United states naval officer and Historian once said "Whoever controls the Indian ocean, dominates Asia. This ocean is the key to the seven seas. In the Twenty-First century, the destiny of the world will be decided on its waters". (Denis ventor, 2010). So, let this control be destined with a strategic plan to uplift the Global seafood sector jointly by the countries of the Indian Ocean.

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