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Blue Revolution versus Fishers Livelihood: Review of the Deep Sea Fishing Policy Embracing Multinationals in Indian Waters

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Abstract
The article is a critical inference linking fishers and fishery resources with respect to the recent suggestions on the Deep Sea Fishing Policy of the government of India. As a sustainable policy option in the fishing sector, the paper tries to illumine that any policy recommendation should be fishers-centric and fishery-resource-centric. Though the livelihood implications in the fishing sector is not a novel issue but the proposal of the Meenakumari Commission Report, which recommends for a moratorium to the 200-500 meters area inter alia opening up of the sea beyond 500 meters to the multinationals for exploiting the resource potential will have its own ramification in the coastal fishery, firstly in the form of livelihood threats and later in the form of resource depletion and concomitant issues. The report tries to address the poor fishermen by categorising the fish economy into a layering process and thereby juxtaposing this to agriculture and industry based on its scales of operation is indeed helpful for focusing on livelihood, poverty reduction and welfare measures. But the issue is that the other recommendations attract immediate attention as the clout of the multinationals and the capitalist entrepreneurs is too strong compared to the weak lobbying power of the poor fishers. Any policy recommendation devoid of the fisher's livelihood concerns will have far reaching impacts in the coastal areas of India in the days to come.
Keywords: Blue revolution, livelihood security, Meenakumari Report, sustainable development, Deep Sea Fishing Policy

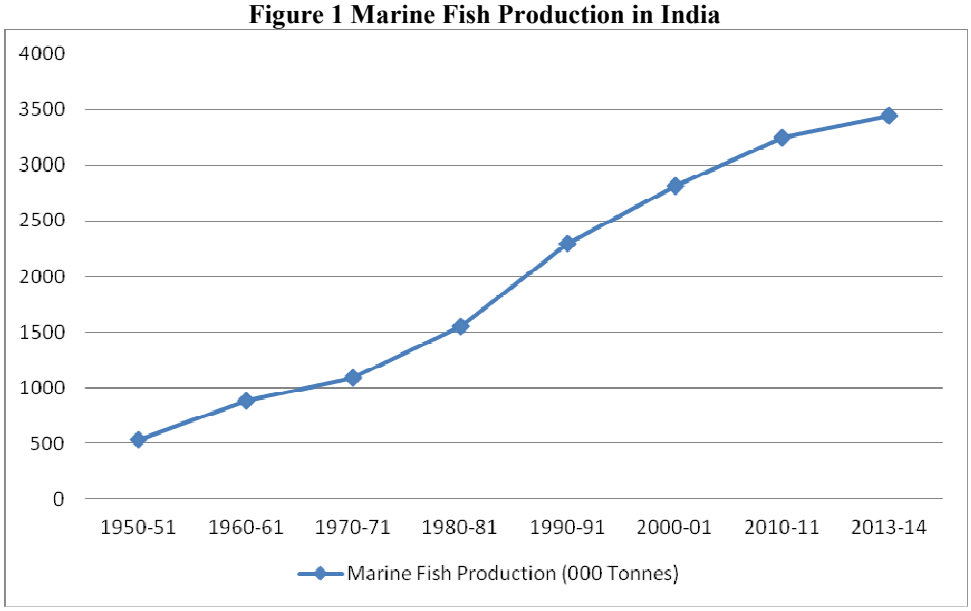
1. Fishing scenario

The fishing sector in India is mostly connected with the livelihood of more than 16 million poor coastal inhabitants stretching over 8118 km, spans over nine coastal states and union territories. Though there are geographical and ethnic differences, the coastal fishers are alike with respect to social, cultural and economic backwardness and are striving hard to eke out their living. They are totally knotted to the system because of the sticky labour with no alternative livelihood options. Several advancements in technology in the harvest and post-harvest sectors through bilateral and multilateral partnership programmes have not helped to rescue the plight of the real fishers. However, this has led to a dualism in the fishing sector, one meant for the traditional fishers with traditional labour-intensive technology catering to the fish consumption needs of the local economy and the other a more vibrant one with new technology-driven capital-intensive system proliferated by 'neo-fishermen' focussing the need of the elite global economies. Hence the livelihood issue in the fishing sector brewed up during the 'new technology euphoria era' in the latter part of the 1950s itself.

2. Resource Potential and Landing Pattern

With a fishery resource bounty of around 4.5 million metric tonnes (mmt) spiralling over 2.02 million square kilo-meters of Exclusive Economic Zone (EEZ), with 1376 landing centres in 3322 fishing villages, India's fish economy is rich in valuable species. This tropical upper Indian Ocean area has a multitude of species and hence it becomes quite difficult to analyse the fishery trophodynamics and the spawning recruitment process. It also depends on the multiple levels of predation in different biophysical levels as fish and fisheries behave in a purely stochastic process. The landing patterns for the last six decades exemplify augmentation from the 1950s to the present with inter-temporal and inter-spatial vicissitudes. The averages and dispersions are meaningful inferences which help to address the sustainable livelihood and inclusive growth. The output patterns in the 1950s (less than one million tonnes) and 1970s (more than one million tonnes) show less levels of dispersion (see Figure 1), which in a way are fishers (livelihood) inclusive stages of development, nonetheless a paradoxical shift is visible from the 1990s with staggering trajectory in spite of high capital intensity (with increasing average cost and marginal cost). The fishery output recently shows a dampening dynamics with stagnation and sustainability issues as it hovers around 4 mmt which again is close to the maximum sustainable limit of 4.41 mmt.

Figure 1 Marine Fish Production in India



Source: Fisheries Survey of India (2014)

3. Globalisation and the Deep Sea Fishing Policy

Fishery resource is in a way a highly globalised renewable resource with immense global demand for exploitation and consumption. The fishing territorial rights consequent to the declaration of the Exclusive Economic Zone in 1976 helped the sovereign right to all countries to protect and exploit the fishery resource for the betterment of the fishery dependent community and the nation. This legal framework helped India to have 2.02 million square kilometres of EEZ. Though globalisation in the fishing sector started much early with the Charter Policy of 1981 and its revision in 1986, the real policy espousal started with the opening up of the economy in 1991. The fishery policy which had made far reaching implications to the livelihood of the traditional fishers is the Deep Sea Fishing Policy (DSFP) introduced in the year 1992, giving licenses to joint ventures, leasing and also test fishing. Within a year the traditional fisher's livelihood was deleteriously affected with dwindling catches in the coastal fishing. Hence it ignited fury against joint ventures, known as 'joint venture against joint venture' by uniting traditional, motorised and mechanised fishers together and temporarily giving up their fight for fishing space and area. This was the first all India agitation organised by the fishers for livelihood under the umbrella of '*All India Swathantra Matsya Thozhilali Federation'* with the prolific support from the NGOs, activists and the clergy. The fishermen in a way succeeded in shelving the Deep Sea Fishing Policy of the government and the resultant formation of the Murari Committee to review this. The report helped to put an end to the deep sea policy with joint ventures. Since then, the fishing sector has witnessed the formation of several committees and ministerial sub-committees by the government to study the problem.

In this background the government appointed another eight member committee to review the Deep Sea Fishing Policy with Dr. Meenakumari as the chairperson. The report endorsed critical considerations annulling the life and livelihood of the traditional fishers, fishery resources, sustainability and biodiversity of the already fragile fishery system. Fishery resource unlike other resources is entirely different in nature, its calculation, landing and forecasting are mere estimates and hence the realities need to be tested and retested in repeated samplings with statistical backgrounds. The committee recommends joint ventures again, increase in the number of deep sea vessels to harness the tuna and other types of resources in the beyond 500 meter waters to earn fishery worth Rupees 3000 crores so as to usher in "The Blue Revolution". This recommendation is 'the effort of a number of wonderful people' for developing useful mechanism for the sustainable development of the deep sea fishing in the country. But what it lacks is the pathetic face of the fishers; linking fishery biology with social arithmetic. This is against the 12th Plan policy of inclusive development through enhancing livelihood integrating economics with ecosystem. To use Schumacher's (Schumacher, 1973) elucidation in "Small is Beautiful" replicated in fishery, 'ever bigger factory vessels, ever bigger destruction of environment, ever bigger concentration of fishery wealth and finally to the ever bigger destruction of the livelihood of the real fishermen', which in a way is a real espousal of the 'tragedy of the commons'.

Table 1 Potential Yield in Indian EEZ

Depth	Resource	Potential Yield (in tonnes)	Share (in percent)
0-100	Demersal	18,25,115	41.37
	Pelagic	19,96,393	45.25
	Total	38,21,508	86.62
100-200	Demersal	2,05,104	4.65
	Pelagic	53,935	1.22
	Total	2,59,039	5.87
200-500	Demersal	98,205	2.23
	Pelagic	16,435	0.37
	Total	1,14,640	2.6
>500	Oceanic	2,16,500	4.91
0-500+	Total	44,11,687	100

Source: Fisheries Survey of India (2014)

The committee's demarcation of the fishing area into three zones, such as less than 200 meters area, 200-500 meters area and beyond 500 meters area is again contentious in relation to resource recuperation and sustainability (Table 1). It is also recommended to increase the industrial deep sea fleets size almost tenfold from the present level, i.e. from 70 (see Table 2 and Figure 2) to 725 for the full exploitation of the hitherto unexploited 4.91 percent of the high valued fishery resources beyond 500 meters area (Table 1). Among other things, it is suggested to give a moratorium in the 200-500 meters area so as to salvage resource depletion in the coastal and more than 500 meters areas. This definitely is a lopsided policy suggestion ignoring the fishers as the present day fishing operations are not limited to the 12 nautical miles area and the motorised and mechanised fishers quite often venture to the 200-500 meters zone for survival. But this is indirectly favouring the multinationals and big capitalists to get attracted to the deep sea fishing activities as it is an added incentive. Even without this the opening up of our deep sea for fishing (beyond 500 meters area) is virtually a big bonanza for these multinational industrial trawlers as most of the high seas other than the Indian Ocean region are heavily over-fished and hence they face under- capacity utilisation problems. In an open access fishery, the rule of the game is harvest maximum lest others will take away the whole. In this game rhetoric process the end result is "Nash Equilibrium" with zero sum games (Nash, 1950). In this level it is of use to quote Daniel Pauly, a renowned fishery-biologist-cum-fishery-management expert, 'overfishing anywhere is a threat to fishery everywhere in the world'.

Hence any policy recommendation in this respect is to be taken with caution and it should be driven with fishers-centric and fishery-resource-centric. The coastal fishers are already facing several threats like port-based development expansions, tsunami impacts and destruction of landing centres *inter alia* climate change induced sea water surface warming. Climate change impact will be challenging to the traditional fishery as the temperature-rise affects first the coastal sea water and this will even change the species movement, behaviour patterns, seasonality and even spawning. These in turn affect fishery management and control measures. The impacts already have had high levels of livelihood and concomitant implications.

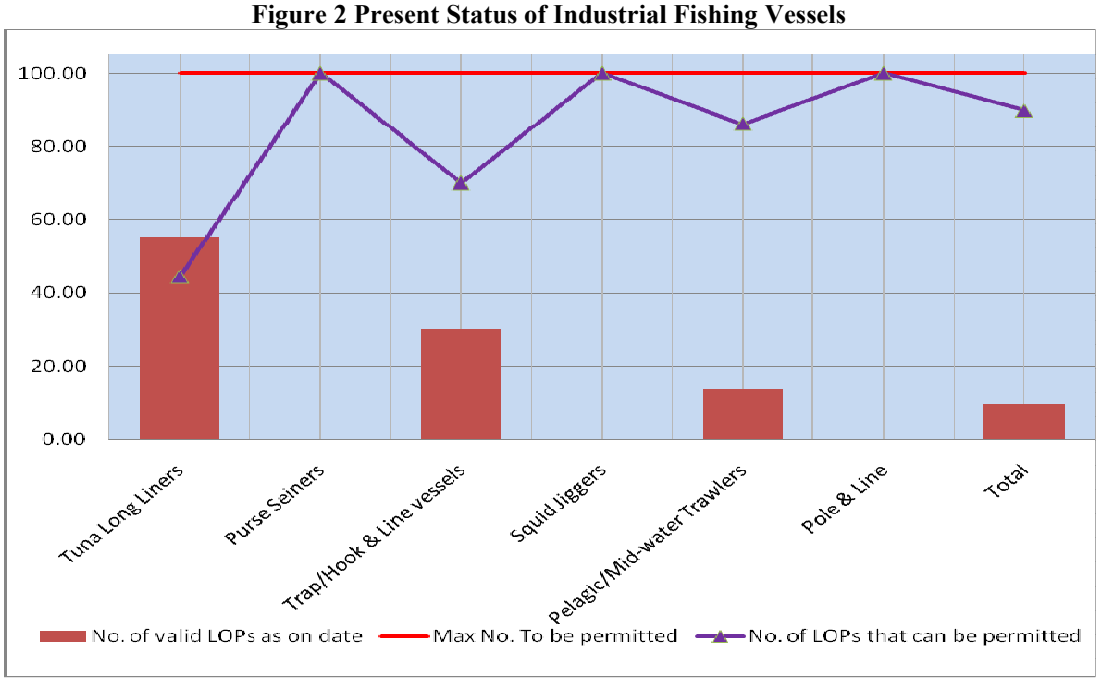
Though the report, by and large, is not fishers friendly, it also tries to address the poor fishermen by categorising the fish economy into a layering process and thereby juxtaposing this to agriculture and industry based on its scales of operation. This indeed is helpful for focussing on livelihood, poverty reduction and welfare measures. But the issue is that the other recommendations attract immediate attention as the clout of the multinationals and the capitalist entrepreneurs is too strong compared to the weak lobbying power of the poor fishers.

Table 2 Present Status of Industrial Fishing Vessels

Category	Max No. To be permitted	No. of valid LOPs as on date	No. of LOPs that can be permitted
Tuna Long Liners	110	61	49
Purse Seiners	18		18
Trap/Hook & Line vessels	10	3	7
Squid Jiggers	15	0	15
Pelagic/Mid-water Trawlers	72	10	62
Pole & Line	500	0	500
Total	725	70	651

Source: DAHD (2014)

Figure 2 Present Status of Industrial Fishing Vessels



Source: Worked out from Table 2

4. Conclusion

Taking into consideration the multiple threats both endogenous and exogenous to the fishery system, the idea of the Blue Revolution should be a useful synthesis ushering in livelihood security and fish security to the local population. Like the other two, much revered revolutions, 'The Green Revolution' and 'The White Revolution' have been successful in safeguarding food and milk security of the people of the country, hence the Blue Revolution should also be moved in that angle. Priority for export sans local people's fish security is not sustainable. Priority for the Blue Revolution should start from fish enhancing techniques coupled with sustainable management practices in the fishing sector with fisher's participation. Any policy recommendation devoid of these will have far reaching impacts in the coastal areas of India in the years to come. It is worth to conclude with the words of John Meynard Keynes (Keynes, 1936), a great economist, 'the world is governed by nothing but ideas and if a wrong idea enters the mind of the policy maker it is very difficult to get it out'. This shows the importance of expert committees and their role in policy recommendations for policy formulations.

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