

Fisheries Development-Led Socioeconomic Transformation of Fishers Community in Kerala

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Abstract: Socioeconomic transformation is a common, collaborative condition across all communities or nations with identical geographical, ecological, and demographic traits. These natural attributes gave a fair stage of efficacy for a community in transition. However, these natural attributes sometimes drag a society's development. Therefore, societies have to adhere to the economic and technological traits which are the result of human endeavour and experience a greater degree of flexibility in transformation. Institutions have a significant role in this context and are an essential catalyst for change. Their contribution is vital and should be acknowledged. Though the fishermen's community is recognised as an underprivileged community, the programs undertaken for the upliftment since the first plan have resulted in a better standard of living. The estimates furnished by the State and Union governments are significant in this context.

Keywords: Marine sector, Socioeconomic Transformation, Fisheries Contribution, and Gross Value Added.

In the pursuit of understanding the socioeconomic transformation of the fishermen community in India, it is generally recognised that the fishermen community is an underprivileged and marginalised one compared to other similarly situated sections like the tribal communities in India. They are living in a situation of unparalleled deprivation and hardships and are struggling for a decent livelihood. Worldwide data indicates that 58.3 million people depend on the fishery sector and aquaculture for their livelihood and well-being (FAO,2014). In the country, the fisheries sector accommodates 3.77 million people. Though aquaculture is essential in augmenting fish production, the regenerating

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ability of the marine fisheries and its capacity to protect the socioeconomic fabric and livelihood cannot be underestimated.

This underscores the fisheries sector's significant role in the country's socioeconomic development, invoking a sense of appreciation in the audience.

Despite facing adversity, the fishing community has demonstrated remarkable resilience. The technology used for harvesting during the eve of independence was crude and had affected productivity on the eve of the first five-year plan. The technology for harvesting the fish manifested the traditional knowledge handed down primarily through learning by doing. (Kurien,1999). However, experts have indicated that the adverse influence of social customs, beliefs, and traditional technology in fishing practices has become a drag on the community's prospects of reaching a realistic socioeconomic well-being. The State and Union governments have introduced programmes and schemes under successive five-year plans for the well-being and better livelihood of the fishing community. Therefore, discussing the socioeconomic indicators is crucial to comprehend the nature, direction, and breakthroughs a community has accomplished in the transition process. The socioeconomic changes all over the world are a product of multiple factors followed by shifts in ideas, ideologies and economic policies. The process of change significantly affects the stimulus for development. Karl Polanyi observed that societal progress necessitates change. The change may be positive or negative, but it is indispensable from the development standpoint. Therefore, governmental interventions are indispensable for the progress of society (Polanyi Karl,1944). Whatever achievements a community has attained over the years are due to its umpteen enthusiasm for incorporating ideas, knowledge and wisdom for its occupational challenges. The systemic character of their know-how system can be best described by an illustration of an endeavour by small-scale fishermen in the Trivandrum district of Kerala to set up artificial reefs.

The know-how about the reefs and sea-fish associations had been passed down to them from the past generation and sustained by their fishing practices over natural reefs in that region. (Kurien,1995). However, diverse traditional technology has limitations as it has affected productivity. The Indo-Norwegian Project, a UN-sponsored project, introduced fishing technology that enhanced fish productivity in India in the early fifties. Consequently, the mid-1980s saw the introduction of Out-Board Machines (OBM) into the artisanal fleet, launching modern craft designs, decreasing gear variety and inserting more active, durable fishing gear, namely ring-seines, into the small-scale fishery. Applying the diverse traditional technology has limitations, as it has affected marine fish productivity. Besides, the decades of experience have contributed to

the overcapitalisation of a significant proportion of the small-scale fishery in India (Kurien, 2000). Investment in technology has a multiplier effect as it enables more investment in the subsidiary sectors. Thus, technology has been the primary catalyst for socioeconomic transformation since the country's planning. Besides technology, the nature, extent and volume of changes in the institutional spectrum also determine socioeconomic change. Walter Hamilton states, "Institutions are the critical elements of change, and the economy is an open and evolving system situated in a natural environment, effected by technological changes and embedded in a broader set of social, cultural and political and power relationships" (Hamilton, 1919). However, the nature, extent, and volume of changes that are taking place in the institutional spectrum of the fisheries sector determine the socioeconomic transformation of the fishermen's community. However, a congenial social condition is also vital from the development standpoint. Social development means the development of social infrastructure, which drives more investment in human resource development.

In India, the fishermen community is characterised by small-scale artisanal fishermen who belong to various social castes and subdivisions. They are categorised as a community based on occupation and identical socioeconomic acclimatisation criteria. Demographically, the coastal region has the highest density, and the livelihood and subsistence considerations primarily dominate the community. The artisanal fishermen only had a little to invest in except their tools. Other small-scale artisanal fishermen include custodians of small-scale mechanised trawlers and merchants of export processing services. (Kurien,1995). The fisher community's primary development concerns are low income, poverty, and widening inequities. Livelihood and subsistence motivations are primarily dominant in the fishing community. The fishery sector comprises people working in the sea, processing plants and markets. The community's primary development concerns are the pockets of low-income poverty and widening inequities. However, applying fishing gear and technology due to government incentives has made fishing more productive. It has resulted in a massive increase in the incomes of the owner fishermen compared with the people using traditional technology. This demonstrates the potential for positive change through government interventions, giving hope for the community's future.

Since the Indo-Norwegian Project, the country's widespread use of technology has contributed to 'technological dualism', resulting in unequal incomes between wealthy and non-wealthy fishermen. The people in the sector include artisanal fishermen, owners of small mechanised trawlers and operators of export processing facilities. (Kurien,1995). However, the government incentives for modernisation have made fishing more productive and have resulted in a massive increase in the incomes of the

owner fishermen compared to the people using traditional technology. Thus, the overcapitalisation of the fishery sector in the country has led to 'technological dualism' followed by income inequities between wealthy and non-wealthy fishermen. Therefore, a holistic approach under the government's initiative to alleviate the growing economic and environmental concerns experienced by the vulnerable sections is required. However, allowing joint enterprises open access to fishing in India's Exclusive Economic Zone has affected the fishing community's livelihood and sustainability. Based on this agreement, a hundred and seventy licenses of nearly 800 vessels were issued (George,1977; Sudarshan,1988). Foreign vessels' quick profit-making compulsions had wrought stagnation, unregulated exploitation of fish resources, and ecological crisis.

Given this backdrop, the paper examines the following significant issues. Firstly, the discussion is elicited from the current socioeconomic position of the fishermen in India and Kerala. Secondly, it examines the fishery sector's contribution to national and state gross value added and fishermen per capita. We recollected information and data from the publications of the Government of India and Kerala fisheries departments and census data from the Central Marine Fisheries Research Institute of 2005, 2010, and 2016. The socioeconomic transformation is analysed using economic indicators such as fisheries technology, fisheries income, and Gross State Value Added (GSVA), as well as social indicators such as literacy and educational standards of the fishing community of India and Kerala.

Development of the Fisheries Sector: India and Kerala

Indian fisheries' development commences with the commencement of the five-year plans, which prioritised infrastructure development the most. The fishing population in India is currently 2,80,63,537, of which 82% and 18% belong to the inland and marine sectors, respectively. According to the CMFRI Census 2016, India had a marine population of 37,74577, out of which 40.5% and 60.65% were occupied and active. The fish production in India in 1980-81 was 24.42 lakh tonnes, which increased to 141.64 lakh tonnes in 2019-2020. The annual average growth rate of fish production was 4.36% and 4.35%, respectively, during the analogues period. Export of fish and fish products attained a target of 12.90 lakh tonnes, valuing ₹ 46,662.85 crore. India accommodates a total of 8,93,258 marine fishermen households. Housing status shows that 70% of households own pucca houses. Educational status reveals that in the total population, 27.36%, 24.54%, 5.15%, and 2.64% have primary and higher secondary, more than higher secondary and degree standards. Compared with the rate of growth of the Indian population (1.76%), the rate of growth of the fishermen population is 55% higher. People depending on the fisheries sector are over 14.5 million, representing about 0.33%

of the Indian population. In 2016, India ranked sixth globally in gross marine captures, contributing 4.54%. Fisheries production increased from 7.5 lakh tonnes in 1950-1951 to 141.64 lakh tonnes in 2019-2020, and its export value was ₹ 46,662.85 crores. Plan expenditure plans have transformed the fisheries sector into a strategic sub-sector of the country. According to the CMFRI census, 91.33% of the fishermen are traditional fishermen. The Marine Information Service of CMFRI-1978 states that India had a total fishing craft of 90,424 in 1961-1962, which had increased to a total of 1,14,566 during 1973-1977, of which 8056 were mechanised, and 106,480 were non-mechanised. However, now, the sector uses multiple types of mechanised and non-mechanised crafts. Currently, the number of crafts operating in the country is around 1,66,333. Compared with 1961-1962, the country's operating crafts grew 45.63% from 2015 to 2016. According to the CMFRI Census-2005, the three types of crafts were mechanised, motorised, and non-motorised, with a proportion of 24.67%, 31.66% and 43.67%, respectively, engaged in fishing in the country. Conversely, the analogous proportions were changed to 25.84%, 58.71%, and 15.44%, respectively, in 2016 (CMFRI, 2016). This indicates a decline in the percentage of non-motorised and mechanised fishing crafts while a very high increase in motorised fishing crafts in use. This change in the number of crafts in two marine censuses in the country (2005&2016) shows that the use of non-motorised crafts registered a decline of 75.36% and mechanised crafts 27.03%. However, there was a marked increase in the use of motorised crafts (29.19%) during the same period. Consequently, there is an overall reduction in the employment of all kinds of crafts in the marine sector (30.33%) from 2005-2016.

Ministry of Statistics, Govt. of India analyses the fisheries sectoral contribution to the national economy from 2009-2010 to 2018-2019. The data reveals that the GVA of the fisheries sector over the ten years has increased due to increased budget outlay for fisheries development under the five-year plans that had contributed to increased GVA of the fisheries sector.

Table 01: Fisheries Sector in Indian Economy

Gross Value Addition (GVA) and Growth Rate (%) (Constant Price: 2011-12)				
Years	GVA of fisheries (Rs. in crore)	National GVA (Rs. in crore)	Y-O-Y Growth (Fisheries Rate)	Y-O-Y Growth (National Rate)
2009-10	61,269	71,31,836	3.53%	6.86%
2010-11	64,663	77,04,514	5.54%	8.03%
2011-12	68,027	81.06,946	5.20%	5.22%
2012-13	71,362	85,46,275	4.90%	5.42%
2013-14	76.487	90.63.649	7.18%	6.05%
2014-15	82.232	97,12,133	7.51%	7.15%
2015-16	90,205	1,04,91,870	9.70%	8.03%
2016-17	99.627	1,13,28,285	10.45%	7.97%
2017-18	1.14.248	1,20,74,413	14.68%	6.59%
2018-19	1,28,011	1,28,03,128	12.05%	6.04%

Source: National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.

Table 01 illustrates the fishery's Gross Value Added (GVA) compared to the National Gross Value Added and the percentage growth rate of both at constant prices from 2009-2010 to 2018-2019. The fisheries sector GVA is defined as the gross value addition of goods and services output produced in the fisheries sector. At the same time, the National GVA measures the aggregate addition to the gross value by producing goods and services in the economy.

Table 02

Share of Gross Value Addition(GVA) of Fisheries Sector (Constant Price: 2011-12)			
Years	GVA of Fisheries Sector (Rs. in crore)	National GVA (Rs. in crore)	Share of Fisheries Sector (%)
2009-10	61,269	71,31,836	0.86
2010-11	64,663	77,04,514	0.84
2011-12	68,027	81,06,946	0.84
2012-13	71,362	85,46,275	0.84
2013-14	76,487	90,63,649	0.84
2014-15	82,232	97,12,133	0.85
2015-16	90,205	1,04,91,870	0.86
2016-17	99,627	1,13,28,285	0.88
2017-18	1,14,248	1,20,74,413	0.95

Share of Gross Value Addition(GVA) of Fisheries Sector (Constant Price: 2011-12)			
Years	GVA of Fisheries Sector (Rs. in crore)	National GVA (Rs. in crore)	Share of Fisheries Sector (%)
2018-19	1,28,011	1,28,03,128	1

Source: National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.

The GVA of the fisheries sector was 61,269 crores in 2009-2010, and it has increased to 1,28011 crores in 2018-2019. Compared to 2009-2010, the GVA of fisheries has doubled in 2018-2019. The percentage growth of GVA has increased at an average rate of 108.93% over the ten years. GVA is a monetary measurement of the goods and services produced by deducting the value of all intermediate products attached to that production. Compared with fisheries GVA, the GVA of the national economy was ₹ 71,31,836 crore in 2009-2010, and it has increased to ₹ 1,28,03,128 crore in 2018-2019. The ten-year growth rate is estimated at 79.52%. This articulates the fisheries sector's commendable growth performance over the national economy during the reference period. The year-over-year (Y-o-Y) fisheries' growth rate is also positive. It was 3.53% in 2009-2010 and increased to 12.05% in 2018-19.

Table 03

Years	Y-O-Y Growth Rate (Fisheries Sector)	Average Growth Rate (%) (Fisheries Sector)	Y-O-Y Growth Rate (National)	Average Growth Rate (%) (National)
2009-10	3.53	5.27	6.86	6.32
2010-11	5.54		8.03	
2011-12	5.2		5.22	
2012-13	4.9		5.42	
2013-14	7.18		6.05	
2014-15	7.51	10.87	7.15	7.16
2015-16	9.7		8.03	
2016-17	10.45		7.97	
2017-18	14.68		6.59	
2018-19	12.05		6.04	

Source: National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.

Again, the fisheries sector recorded an average growth rate of 5.27% and 10.87%, respectively, during the first and second half of the reference period. The national economy recorded an average Y-o-V growth rate of 6.32% and 7.16%, respectively, during the first and last half of the reference period. Comparing the two growth rates, the fisheries sector

growth rate outstripped the national economy growth rate during the reference period.

Compared with National Fisheries, Kerala also shows the same trend in the contribution of fisheries GVA to the State GVA from 2011-2012 to 2020-2021. Kerala has a coastal length of 590 Km and an EEZ (Exclusive Economic Zone) of 218536 Sq. Km and the continental shelf area of 41Sq. Km. The state has 333 fishing villages comprising 220 marines and 113 inland fishing villages. Of the fourteen districts of Kerala, nine are coastal districts, and five are non-coastal. The sector accommodates 2.92% of the state's population. Of them, 77% belong to the marine sector and 23% to the inland sector (Govt. of India, 2020). The sector has an active fishermen population of 2,36,300, of which 78.83% are employed in the marine sector, and the remaining was in the inland sector in 2016-2017. Kerala accommodates 14.93%, 13.61%, and 17.36% of the marine fishermen population, fishermen households and pucca houses of India. In the total marine fishermen population, 32.56%,34.78%,7.41%, and 3.09%, respectively, have primary, higher secondary, above higher secondary and graduation levels of education (CMFRI,2016). Kerala state shares 12.97% (1.79lakh tonnes) of output in the total marine exports of the country, and the revenue gain from the output was 13.12% in 2017-2018 (Govt. of Kerala, 2019). The fisheries sector's contribution to Gross State Value Added (GSVA) was 1% in 2017-18. (Govt. of Kerala,2018).

Table 04: Income from the Fisheries sector at current prices
(the base year 2011-12)

Items	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
GSVA from Fisheries sector (in Lakhs)	377363	515183	622837	704319	834359	973424	1119044	1147331	1057278	1065513
% Contribution of fisheries to primary sector	7.38%	9.71%	10.56%	10.45%	12.63%	13.48%	14.23%	14.18%	12.6%	12.09%
% Contribution of fisheries to total GVA	1.112%	1.35%	1.45%	1.49%	1.64%	1.71%	1.76%	1.65%	1.45%	1.56%
Per capita Income of Kerala (GSDP at current prices)	108666	122471	137515	150824	164554	184979	203396	227397	233338	220196
Per capita Income of the fishermen (GDP at current prices)	40247	54834	66307	69183	81497	94610	108224	110408	101237	101519

Source: Kerala Fisheries Handbook 2020 & Kerala Fisheries Statistics at a Glance 2022, Directorate of Fisheries, Govt. of Kerala.

The Kerala Fisheries Handbook-2020 estimates the contribution of fisheries to the Gross State Value Added. The GVA of the fisheries sector in 2011-2012 was 3,77,363 lakhs, and it had increased to 10,65,513 lakhs in 2020-21, marking an increase of 182.35%. Besides, the share of fisheries in the primary sector increased from 7.38% to 12.09% during the reference period. The per capita GDP of the fishermen (at current prices) has increased from ₹ 40247 to ₹ 101519, marking an increase of 152.23%, while the State per capita GDP (at current prices) has increased by 102.63% during 2011-2012 to 2020-2021. The rate signifies enhanced well-being and better socioeconomic development. The growth of the fisheries GVA is due to scientific assessment of the potential of fishery resources, expansion of fish production, sustainable technology, and augmenting exports.

Table 05: Budget Outlay and Expenditure (Plan) Fisheries Department

Year	Total Budget Outlay of Fisheries Department (Rs in Crores)				Total Expenditure of Fisheries Department (Rs. in Crores)				Percentage of Expenditure
	State Plan	Other CSS	100% CSS	Total	State Plan	Other CSS	100% CSS	Total	
2010-11	59.46	18.50	24.00	101.96	56.83	23.54	12.20	92.57	90.79
2011-12	105.79	17.50	15.00	138.29	120.1	28.53	15.00	173.63	125.55
2012-13	160.85	24.00	18.00	202.85	139.5	46.93	16.33	202.77	99.96
2013-14	193.35	68.10	18.00	279.45	157.0	68.28	17.38	242.70	86.85
2014-15	232.52	92.30	18.30	343.12	164.2	87.60	0.20	252.09	73.50
2015-16	293.12	35.94	18.30	347.36	272.8	37.74	18.32	328.9	94.70
2016-17	268.79	41.54	16.98	327.31	267.9	55.87	22.87	346.71	105.93
2017-18	320.08	40.00	17.01	377.09	364.2	13.58	39.7	381.82	101.25
2018-19	389.43	7.80	12.01	409.24	298.6	9.15	6.05	313.8	76.68
2019-20	280.15	16.25	12.00	308.40	211.1	7.15	5.22	223.58	72.50
2020-21	236.33	15.00	12.00	263.33					

Source: Kerala Fisheries Handbook 2020, Directorate of Fisheries, Govt of Kerala.

Table 05 provides the State plan's budget outlay and expenditure for the fisheries sector in Kerala from 2010-11 to 2020-21. Apart from the State plan outlay, it represents many components, such as the outlay of centrally sponsored schemes and a hundred per cent investment by Centrally sponsored schemes. For example, in 2010-11, the total fisheries plan outlay was 101.96 crores; it increased to 236.33 crores in 2020-21 for eleven years. The budget outlay for the fishery sector for the 11 years has almost tripled, or the outlay increased to 158.26%, while fisheries sector expenditure has increased by 141%. This is because of the increased spending on infrastructure and related expenditures throughout the

sector plans. However, the budgetary outlay in 2018-19 was 409.24 crores, but the expenditure was only 313.8 crores. That means the outlay growth rate was 301.37% while the expenditure was 238.98%. Again, the budget outlay and spending have declined, and the pandemic and related slowdown activities have impacted and sped up the decline.

Conclusions

The fisheries sector GVA at the national level has increased by 108.83%, while the economy's growth rate was 79.52% from 2009-2010 to 2018-2019. The same trend was recorded in Kerala too. In Kerala, fisheries' GVA has increased by 64.58%. This is an indication of fisheries sector development compared with the national economy. Further, the average number of fishermen per capita increased more than the State per capita in Kerala. The fisheries per capita outstripped the State by 60.35%, while the State per capita income increased only by 50.35%. The government agencies' data has conclusively disproved that the well-being of the fishermen's community has diminished since the introduction of economic reforms in the country. The increased outlay by the Centre and state governments for fisheries development is the primary reason for this phenomenal growth. The government of India initiated the scheme "Pradhan Mantri Matsya Sampada Yojana" in 2020, which marks the all-time high investment to the tune of ₹ 20,050 crores, signifying enhanced allotment for the fisheries sector.

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