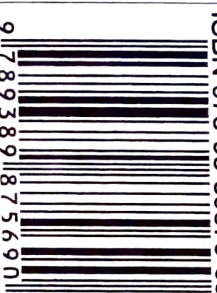


It is a well-known fact that Kerala occupies a unique position among the Indian states. It stands apart with near hundred per cent literacy rate, long life expectancy, low infant mortality rate, remarkable health facilities, etc. Without having the level of per capita income of developed countries, it has achieved very high performance in all indicators of human development comparable to western countries. The unique development experience of Kerala, as reflected in the term 'Kerala Model', has attracted the attention of economists, sociologists, anthropologists, development practitioners and policymakers alike. Several factors can be identified as reasons for this incredible achievement in social sector development. Progressive social policies of the rulers before and after the formation of the state particularly in the field of education, public health, land reforms and redistributive policies of the government, vibrant civil society, democratic decentralisation etc. are some of them. However, Kerala's 'high profile performance' in terms of various indicators of well - being is not matched by growth in the industrial sector or generation of employment opportunities. The worsening fiscal situation, rising educated unemployment, high morbidity etc. are some of the challenges faced by the Kerala economy.

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8	Public Health System in Kerala <i>Aabha Benjamin</i>	97
9	Marine Fisheries in Kerala- Characteristics, Composition and Trends <i>Rahi T.B.</i>	111
10	Sources of Drinking Water and Fuel Consumption: Disparities Between Urban and Rural Households in Kerala <i>Sruthi James</i>	127
11	Post Flood Scenario: A Study on Aranmula Metal Mirror Artisans <i>Revathi U. and Sruthi James</i>	143
12	Regional Inequality in Access Healthcare in Sector in Kerala: A Study Based on Cancer Care <i>Sachin Shaji and Sheeja S.R.</i>	155

Marine Fisheries in Kerala- Characteristics, Composition and Trends

*Rahi T.B.**

ABSTRACT

India is a major marine fish producing country in the world. In India, fisheries sector has been recognised as a powerful source of foreign exchange, employment generation. It stimulates the growth of many subsidiary industries and also ensures food and nutritional security. Kerala is a coastal state and fisheries sector is considered as one of the most productive and important sectors. People in the coastal areas of Kerala depend on fisheries for their livelihood. This paper attempts to analyse the characteristics and trends in the marine fisheries sector in Kerala and also analyses the contributions of the marine fisheries sector in the economic development of Kerala.

INTRODUCTION

Fisheries sector is one of the promising sub-divisions in the agricultural sector of India. The fisheries sector in India had made rapid strides, and its role in the food supply, employment and raising nutritional standards of the population has expanded in recent decades. It has been a major contributor of foreign exchange to the nation. In India, fisheries is a vital economic activity which

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supplies highly nutritious animal protein for human consumption and offers employment and income to millions of poor people in coastal areas (FAO, 2016). The fishing sector is recognised as a significant income and employment generator to the rural poor of the nation as well as it stimulates the development of many subsidiary industries. Fisheries is one of the promising sectors categorised along with agriculture and allied activities in India. Since the introduction of economic planning, the focus of fisheries development has been strategically shifted in favour of a growth-oriented model.

The fisheries sector contributes significantly to the Indian economy by providing livelihood to approximately 14.49 million people. India is a major contributor of fish through aquaculture and has the second rank in the production in the world after China. At present, total fish production in India is 12.59 million tonnes (MT) including 8.90 metric tonnes from Inland sector and 3.69 metric tonnes from the marine sector. Increasing contribution from inland sector and aqua culture is paradigm shift experienced by the Indian fisheries sector. Among various states in India, Tamil Nadu was the biggest marine fish producing state with 775,000 MT, followed by Gujarat with 749,000 MT, and Kerala with 544,000 MT. The fisheries sector contributes 1% to the overall GDP and 5.5% of the GDP from Agriculture and allied activities. Apart from its contribution to GDP and employment, the sector catalyses growth in many industries. During 2018-19, the export of marine products from India was 1.84 lakh tonnes.

Kerala is one of the active maritime states in India, with its coastline about 590 km, which is around 10 percent of India's coastline. The fisheries sector accommodates 2.98% of the total population of Kerala, of which 77percent are in the marine sector. (GoK, 2017). The number of active fishers is 2,36,300, of which 78.83 percent are engaged in the marine sector during 2016-17. The production of the marine sector was 1.88 lakh tonnes in 2016-17. Kerala contributes 12.97 percent (178646 Metric Tonnes) of output to the total marine export of India, and the revenue earned from the

same was 13.12 percent in 2017-18 (GoK, 2019). The share of the fisheries sector to Gross State Value Added (GSVA) was 1 percent in 2017-18(GoK, 2018).

The socio-economic conditions of the fishermen are very backward. They are lacking the culture of education and live under improper housing conditions. They usually live in a narrow strip of land in a crowded manner without proper sanitation facilities that lead to various kinds of health issues. Due to the low income of the family, they do not have sufficient basic facilities in their houses. Moreover, in order to support a large number of family members, the fishermen are compelled to borrow credits to fulfil their basic needs. The socio-economic condition of fishers in Kerala is not different from that of the country. The major objective of this paper is to identify the contributions of the marine fisheries sector in the economic development of Kerala. It also examines the characteristics and trends in marine fisheries sector in Kerala.

DATA SOURCE AND METHODOLOGY

The study is based on secondary data obtained from various publications and government agencies. Various publications of the Department of Fisheries of the Government of India, Department of Fisheries of the Government of Kerala were used for the study. Kerala Fisheries Statistics at a Glance, Kerala Marine fisheries Statistics, State Budget Documents, Handbook on Fisheries Statistics etc. were the important publications of the Government of Kerala. Data from Indian Marine Census 2005 and 2010 of Central Marine Fisheries Research Institute (CMFRI) were also used for the study.

FISHERIES IN KERALA

Kerala is one of the main maritime states in India situated at the south western end of the Indian peninsula with a wide variety of marine species. Kerala is one of the largest contributors to the total marine fish landing in India. The state of Kerala is rich in fisheries

wealth with a coastal line of 590 km. The Western coast of India, including Kerala, is affluent in marine wealth among which Kerala's contribution is very high.

The fisheries sector in Kerala contributes 8.8 per cent of the Gross State Domestic Product from the primary sector, which is very significant to the state's economy. Fishers are spread over 222 fishing villages in 9 coastal districts among 14 districts in Kerala, which includes Trivandrum, Kollam, Alappuzha, Cochin, Trissur, Malappuram, Kozhikode, Kannur and Kasaragod. The Southernmost districts of Kerala - Trivandrum, Kollam and Alappuzha - have a total coast length of 197.2 km with 96 marine fisherman villages. The population of marine fishing communities in Kerala is around 3.03 % of Kerala's total population. Muslims dominated the marine fishing villages of northern districts like Malappuram and Kozhikode. Christians and Hindus dominate other parts of coastal areas of Kerala.

CONTRIBUTION TO THE ECONOMY

The fisheries sector contributes to income, exports, food and nutritional security and employment generation. Fisheries contribute 1.59 % of the state domestic product and it contributes more than 13% of SDP from the primary sector. As compared to the share of fisheries sector in GDP and GDP arising from primary sector of India, the contribution of Kerala's fisheries sector to the state's SDP and SDP arising from primary sector are more. Definitely, this underlines the relative significance of fisheries sector in Kerala's economy in general and the primary sector in particular.

Export

Kerala has made vital contributions to the export of marine products from the country. In 2018-19, the export of marine products from Kerala was 1,83,064 tonnes valued at ₹6014.70 crores. Quantity and value of exports of marine products from Kerala has been increasing since 2015-16.

Table-1: Export from Marine Products from Kerala

Year	Quantity (in Tonnes)	Value (in Crores)	% share in All India	
			Quantity	Value
2012-13	166399	3435.85	18	18
2013-14	165698	4706.36	17	16
2014-15	166754	5166.08	16	15
2015-16	149138	4644.42	16	15
2016-17	159141	5008.54	14	13
2017-18	178646	5919.03	13	13
2018-19 (P)	183064	6014.70	13.3	12.84

Source: GoK, 2019

Table 1 shows that in 2012-13, the export of marine products from Kerala was 1,66,399 tonnes values at ₹3435.85 crores. There was a considerable decline in export during the 2015-16 period. The share of Kerala in the total export of marine products from India is falling, in terms of value, over the years. The share of Kerala in the total export of marine products from India in terms of quantity increased marginally in 2018-19.

MARINE FISH PRODUCTION

In the case of total fish production, Kerala was ranked 10th among fish producing states in India. Kerala was ranked 5th in the case of marine fish production (GoI, 2018). The total fish production in Kerala, which has been declining since 2015-16, has witnessed a significant increase in 2018-2019. Similarly, marine fish production which was declining since 2014-15 has surged in 2018-19. Increase in marine fish production has been the prime reason for the jump in total fish production in Kerala in 2018-19 (GoK, 2019)

Table-2: Fish Production in Kerala

Year	Kerala		
	Marine	Inland	Total
2014-15	5.24	2.02	7.26
2015-16	5.17	2.10	7.27

Year	Kerala		Total
	Marine	Inland	
2016-17	4.88	1.88	6.76
2017-18	4.84	1.89	6.73
2018-19	6.04	1.92	8.01

Source: Fisheries Department, GoK, 2018

The district-wise analysis of fish production in Kerala shows that Kollam is the leading producer of marine fish followed by Ernakulam and Kannur. These three districts contribute 72 per cent of the marine fish production in Kerala.

Table-3: District wise Marine fish Production (Lakh tonnes)

Sl. No	District	Marine fish Production
1.	Thiruvananthapuram	0.45
2.	Kollam	3.12
3.	Alappuzha	0.45
4.	Ernakulam	0.68
5.	Thrissur	0.25
6.	Malappuram	0.11
7.	Kozhikode	0.17
8.	Kannur	0.59
9.	Kasarode	0.27
	Kerala	6.09

Source: GoK, 2018-19

Characteristics of the fisheries sector

In Kerala, there are nine coastal districts. There are 222 marine fishing villages wherein fishermen reside. The maximum number was in Thiruvananthapuram (42), and the minimum was in Kannur district (11). Unlike the general population, there is a predominance of males in the fishermen population. The concentration of marine fisherfolk is more in Thiruvananthapuram (27%).

Table-4: Percentage Distribution of Fishermen

Sl. No.	District	Marine
1.	Thiruvananthapuram	27.3
2.	Kollam	8.31
3.	Alappuzha	11.96
4.	Ernakulam	5.69
5.	Thrissur	3.13
6.	Malappuram	20.29
7.	Kozhikode	12.93
8.	Kannur	3.57
9.	Kasarode	7.09
	Total	100

Source: GoK, 2013

Table 4 depicts the percentage share of the fishermen population in the state. Of the total fisherfolk population, Thiruvananthapuram accounted for 27 percent followed by Malappuram (20.29%) and Kozhikode (12.93%) and Alappuzha (11.96%). Thrissur (3.13%) has the lowest share of fishermen population in the state.

FISHERMEN POPULATION

According to Census 2011 Population of Kerala is 334 lakh and the fisherfolk population in 2018-19 is estimated to be around 3.1 per cent of the Census population. They reside in 222 marine fishing villages and 113 inland fishing villages in Kerala. The fisherfolk population of the State for 2018-19 is estimated as 10.39 lakh out of this, 8 lakh belong to the marine sector.

Table-5: District-wise distribution of fisheries population in Kerala

Sl. No	District	Marine			Total
		Male	Female	Children	
1.	Thiruvananthapuram	64212	56673	50350	171235
2.	Kollam	40500	33648	20271	94419

Sl. No	District	Marine			Total
		Male	Female	Children	
3	Alappuzha	53335	48721	28370	130426
4	Ernakulam	29123	27267	17226	73616
5	Thrissur	21023	21589	14200	56812
6	Malappuram	36244	28889	26086	91219
7	Kozhikode	39571	34282	26168	100021
8	Kannur	19551	10129	8727	38407
9	Kasaragod	17800	16393	9817	44010
	Kerala	321359	277591	201215	800165

Source: Directorate of Fisheries, CoK, 2018-19

Table 5 shows the district-wise distribution of Marine fisheries population in Kerala. Thiruvananthapuram (1.71 lakh) district has the largest fisherfolk population, followed by Alappuzha (1.30 lakh) and Kozhikode (1.00 lakh). Kannur is the district with the lowest fisherfolk population. The number of active fish workers in the state in 2018-19 was 2,42,954, of which 88 per cent (2,13,058) were males. Thiruvananthapuram district had the largest number of active fish workers, followed by Alappuzha and Malappuram. Active fish workers are those workers who are engaged in fishing for their livelihood and are engaged in fishing for their livelihood and are registered with Kerala Fishermen's Welfare Fund Board. In 2018-19, the number of allied workers in the fisheries in Kerala was 84,483, of which 80 per cent (67,757) were women. Their number was highest in the district of Alappuzha, followed by Kollam and Ernakulam. Allied workers are those engaged in fishery-related activities for livelihood and are registered with Kerala Fishermen's Welfare Fund Board.

Sex ratio

Kerala has a unique position with regard to sex ratio. In the population census, females outnumbered males in Kerala,

which is contrary to all India pattern. Kerala is a state unique in India for its sex ratio favourable to women. However, in fisherfolk, the sex ratio is 936 females to 1000 males. In the marine sector, it is 933. All marine districts have a sex ratio below 1000. Gender-wise age structure and sex ratio among the fisherfolk are unfavourable to females. While the ratio among the general population in Kerala is 1058 females for 1000 men, among the fisherfolk, it is 936 female per 1000 men. Several women belonging to fishermen community are anaemic. About one-quarter of the children are underweight at birth. Incidence of tuberculosis, cancer, hepatitis, kidney diseases etc. are found to be more on the coastal areas. The Number of HIV cases is also on the increase (UNDP, 2009).

Table-6: Sex Ratio

Sl. No.	District	Marine
1.	Thiruvananthapuram	925
2.	Kollam	942
3.	Alappuzha	917
4.	Ernakulam	920
5.	Thrissur	983
6.	Malappuram	939
7.	Kozhikode	924
8.	Kannur	914
9.	Kasaragode	992
	Total	933

Source: CoK, 2013

Table 6 indicates that Kasaragode district (992) has the highest sex ratio among the marine fisherfolk. Kannur (914) has the lowest sex ratio. It is seen that there is no district in which females outnumber males.

RELIGION AND COMMUNITY

Fisherfolk in Kerala come from three different religious groups - the Hindus, Muslims and the Christians. Each of the groups has its own social organisation and mostly occupies separate places in a typical fishing village, although they do share some commonalities. The distribution of the three religious groups varies according to regions (CMFRI, 2005). Hindu fisherfolk are mostly found in the central and northern districts of Kollam, Alappuzha, Thirissur and Kasaragod districts of Kerala. They come from the caste groups of 'naryans', 'velan', 'mukkuvas' and the 'marakkans', respectively. The Hindus worship Bhagvati and Kali, but also have their own culture of cult worship. The religious leaders among the Hindus are the priests who are also involved in the occupation of fishing and are elected by the community (Dietreich and Nayak, 2002). In the marine fishing sector, Christian families are more than over other classes.

Christian fisherfolk are concentrated in the southern and central parts of Kerala. They belong to the Latin Catholic community and are mostly converts from the Makkuva caste groups. The church is the main institution around which the social organisation and the community of the Christian fisherfolk are organised. The priest is the main leader who looks after not only the religious concerns but also the socio-economic concerns of the community. In many cases, the Church levies a tax on the fishermen, which is usually 5% of their income. This right to collect tax, the Kuthuka is auctioned and usually goes to someone better off, who hands this money to the Church (Dietrich and Nayak, 2002). Catholic fishers are very poor but are adventurous, aggressive and creative compared to the other two religious communities. It is often said that the Christian fisherfolk are the 'real' fisherfolk of Kerala (Hapke, 2001). Ram (1991), who has worked amongst the Makkuva Christians of the south, traces the low status of the fisherfolk in the society to their geographical isolation and being concentrated in the coastal areas, in slum-like and crowded settlements.

Table-7: Religion-wise distribution of Marine Fishermen

Category	Marine	
	No. of families	%
Hindu	43617	50.93
Christian	59320	42.06
Muslim	38093	27.01
Total	141030	100.00

Source: Gok, 2013

Table 7 shows that Christians constituted (42.06%) of the fishermen families, followed by Hindus (30.93%) and Muslim (27.01%). In most northern districts, fishermen families were dominated by Hindus except in Malappuram where Muslims formed the majority.

EDUCATIONAL STATUS

Education shapes an individual to fit a member of modern society and is the most powerful tool for the socio-economic development of the society. Education also makes a person more efficient in using the available financial resources. Literacy and education are the hallmarks of Kerala's development. On this count also marine fishing communities lag behind the state as a whole. The members of the fisherfolk are forced to involve in fishing during childhood stage onwards because they earn income from this assistance. Therefore, dropout rates are increasing. Taking the working population alone the literacy rate among fish workers is 67 per cent whereas it is 89 per cent for the working population of Kerala taken as a whole. The disparity is more significant in the case of women workers. Women fish workers have a literacy rate of 44 per cent against 79 per cent for all women workers (Kurien, 1995). Among the fisherfolk, 87.06 per cent of males and 84.53 per cent of females are literate as against the general male-female literacy rates of 94.2 per cent and 87.86 per cent (Gok, 2004).

Kerala's effort in making basic education facilities accessible to a large majority of the people is well known. Primary and even upper primary schools exist in close proximity to all the fishing villages. Literacy movements in Kerala show an increase in literacy rate of the general population and this affects the literacy rate of fisherfolk also in a satisfactory manner (GoK, 2013). In the total fisher folk, 93.92% of the males and 93.01% of the females are literates, but in 2003-04 the literacy rate was 87.06% for male and 89.41% for females.

Table-8: Distribution of Marine fisher folk by the level of Education and Sex

Category	Marine (%)		
	Male	Female	Total
Illiterate above 5 years	6.75	7.41	14.16
Literate but not formal education	0.35	0.36	0.71
Lower Primary	11.16	9.68	20.84
Upper Primary	14.5	11.9	26.41
Secondary	12.67	11.23	23.9
Higher secondary	4.82	5.05	9.87
Degree	1.39	2.26	3.65
Post Graduate and above	0.18	0.28	0.46
Total	51.82	48.18	100.00

Source: GoK., 2013

Table 8 shows that 14.16% of fisher folk population is illiterate. Among them, 7.41 % are illiterate women. At higher levels of education, the share of fisherfolk declines considerably. The literacy rate is more for male people than females. The percentage of females having Degree and Post Graduate courses is more than that of males.

Occupational pattern

The economic condition of a household mainly depends on the occupation, level of employment and income of the working

members of the household etc. In the marine sector, 45.31% of people working in the fishing sector and 54.69 % in the non-fishing sector. In the marine sector, 97.67% of the fishermen depend on the sea for fishing.

Table-9: Occupational pattern

Sl.No.	Occupation	Marine (%)
1.	Traditional Fishermen	36.73
2.	Shell collection	0.07
3.	Crab collection	0.08
4.	Fish culture	0.05
5.	Seed collection	0.15
6.	Fish sale-Head load	4.52
7.	Other fish sellers	0.65
8.	Peeling work	1.47
9.	Fish processing	0.17
10.	Repair of nets	0.07
11.	Other allied workers in the fishing sector	1.33
12.	Doctor	0.02
13.	Engineer	0.03
14.	Business	0.19
15.	Abroad	1.11
16.	Retired from fishing	1.72
17.	Retired from other work	0.16
18.	Unemployed	40.24
19.	Disabled	3.68
20.	Other works	7.53
Total		100

Source: GoK, 2013

Table 9 shows that 36.73 % are traditional fishermen, and 40.24% are unemployed. 7.53% of the fishermen population engaged other works. 4.52 % are fish vendors, and 1.47 are engaged in fish peeling activities.

HOUSING AND LAND OWNERSHIP

One of the principal reasons for the poor quality of life and substandard conditions of marine fishing communities in Kerala is the crowding of the community on a narrow strip of the land along the length of Kerala's coastline. The major impact of this crowding nature of living is reflected in the landholding patterns of fishers in Kerala. The density of population in the coastal area is around 2168 persons/km², whereas the state is 860. Overcrowding nature leads to health and hygienic issues. Majority of the fishermen lives in purampokes that is the land owned by Government (John, 1989).

Table-10: Possession of Land (marine)

Category	Marine	
	Number	%
No Land	12850	9.11
Up to 5 cents	84730	60.08
6-10 cents	30422	21.57
11-50 cents	12895	9.14
51-100 cents	82	0.06
101-500 cents	34	0.02
Above 500 cents	17	0.01
Total households	141030	100

Source: GoK, 2013

Table 10 indicates that only 35% of the coastal people have more than 5 cents of land. Around 12850 peoples (9.11%) in coastal areas are landless and homeless. 60.08 % of the marine fisherman possesses land up to 5 cents.

CONCLUSION

The socio-economic status of the fishing communities in the nine maritime districts of the coastal belt of Kerala depicts a picture of diversity. The general picture of fishing communities in Kerala exhibits their extreme pathetic living conditions. The fisherfolk are isolated from mainstream society due to the low level of literacy and undignified mannerisms. The fishermen belonging to the traditional fishermen community live in poverty and they remain excluded. Their income, land ownership and housing facilities and standard of living are very low. They belong to three religious groups- mainly Hindus, Christians and Muslims. However, fisheries sector has a significant role in the development of the Economy.

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