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RESEARCH ARTICLE

A STUDY ON THE SOCIO-ECONOMICS OF COASTAL FISHERIES WITH SPECIAL REFERENCE TO THE SUNDARBANS OF WEST BENGAL, INDIA

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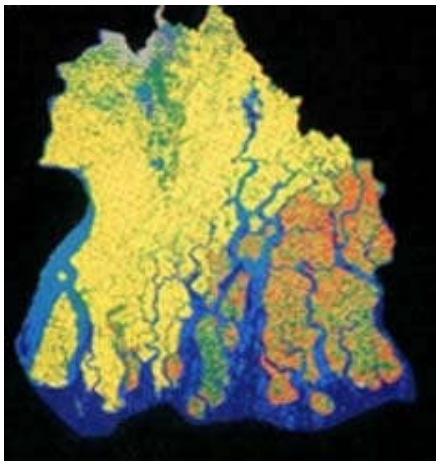
ABSTRACT

An intensive study has been conducted for last three years since 2009-11, to estimate the Gender in coastal fisheries of West Bengal, India to assess their socio-economic status, literacy, income, health hazards, recreation, sanitation & medical facilities, family size, types of fishermen, child labour, crafts & gears used and total annual landings. Total 0.215 million fishermen of different categories engaged in coastal fisheries of which 51.35% male and 48.65 % are female. And out of 0.215 million fishermen the present study has been conducted on 16254 (Male – 8346, Female-7908) of which 112 are child labour. Prime fishing season is during October to March every year and produce about 17.6% of total West Bengal production and 6.2% of total annual marine production of India. Four different types of fishermen participated in fishing activities are 'Laya'((active fishermen – 1080), 'Saudagar'(people who buy the fish from 'Layas' – 396), 'Aratdar' (the stockiest – 196) and 'Shramik' (help in sorting, cleaning, drying and subsequently sale the product – 14186). Rate of literacy has been observed to be very frustrating among the fishing families, sex wise literacy percentage recorded as male – 19%, female – 15% and up to 4th standard – 25%, 10th standard – 4% and above – 2% only although average literacy rate in the two coastal districts East Midnapore and South 24-Parganas is about 80.17%. Fisher folk also undertake various subsidiary activities like waged labour in agriculture, construction work, poultry raising etc. for additional income. The income group level assessed through questioner and interrogation are categories in three different levels of Rs. < 10000 (88%), Rs. >10000 (9%) and Rs. > 25000 (3%). As xAB (10.64) is not equal to zero (0), so, income and education in not independent. Child labours are paid only Rs. 40-50 per day, equivalent to one (1) USD. Most of the fishermen, particularly 'Sramik'(labour group) accompanying the fishing units with or without nets suffering from Asthma, Dysentery, Diarrhea, Gastrointestinal disorder, Malaria, Helminthesis, Typhoid, Scabies etc. as they do not provided proper sanitation, tube well for drinking water, drainage system, medical facilities. Only three community centres are available for recreation. They take loan from 'moneylenders' to meet the running expenses when they are away for fishing which is never adequate to meet their domestic requirements and again they compelled to conface further loan from the 'money lenders'. Majority of the fishermen houses (labour group) are closely constructed and they lived in temporary hut with 'Hoogla' thatches. The average family size of the study area are found to consist of 6 -7 members and from this study it is indicated that large numbers of families were unable to provide two major meals to their children thorough out the year while some other lived under debt throughout their life as very large number of fisher folk did not have more than 3 months employment in a year. The result of the correlation analysis clearly reveals that income and family size is positively correlated (r = 0.489) to each other. So, gender, family size and income of a family is the most important index of the socio economic condition of the fishermen.

INTRODUCTION

West Bengal is one of the most important marine fish producing state which has about 158 Km. coastal line including Hoogly-Matlah estuary. (Bandyapadhyay *et al.,* 2003). The state of West Bengal has 158 km coast line situated in between Latitudes 21.5^0N and 24.5^0 N and Longitudes 86^0E and 89^0E of the northern part of Bay of Bengal. Total estimated inshore area up to 10 fathom depth is 777 sq. km. offshore area up to 40 fathom depth is 1813 sq. km., continental shelf is 17049 sq. km., and average production potential is about 35344.35 MT. The state contains 19 district among them two are coastal viz, Purba Medinipur and South 24-Parganas. Nearly 2.15 lakh marine fishermen earn their livelihood from these rich marine resources. This sector plays a significant role to develop the socio-economic condition of the fisher folk, several workers have studied socio-economic status of the coastal fisher folk in different area of West Bengal (Bhaumik *et al.,* 1991; Bhaunik and Saha, 1994; Jha *et al.,* 2003). But the available information is sporadic and in-complete. The marine production is about 17.6 % of the total fish production of West Bengal and 6.2 %



Indian part of the Sundarban forest, lying within the latitude between 21°13'-22°40' North and longitude 88°05'-89°06' East

of the total annual marine production of India. In this study area mainly two types of fishing activities are invouge i.e., (1) active fishing by small size trawler and (2) passive fishing through operation of behundi net within 50 m. depth zone in the neretic region. Here, average catch and effort per fishing day for six months (mid October to mid March) both for mechanised and non-mechanised crafts were observed. Marine fishermen in all 'khoties' are divided in to three categories based on the activities of the fishermen. They are 'Laya', 'Saudagar', 'Aratdar' and rest of the fishermen's also treated as 'Sramik'.

The Government has undertaken many programmes to develop the marine fishermen communities such as various production oriented programmes, input supply programmes, infrastructure development programme etc. besides initiating appropriate policies. But during the present study it has been observed that most of the Governmental programmes have to reach to this from fisher folk for whom those are basically adopted in the marine fish landing (Khoti) activities. Over all there is no comprehensive information available on the fish and fisheries and socio-economic aspects of fisher folks of these landing centres of the Sundarbans except a few (CMFRI, 1987; Anon; 2000; and Ghorai *et al.,* 2004**).** With this objective to frame a definite plans and programmes for socio-economic development of the community, a detail observation on the fish and fisheries, craft and gears in operation and some social aspects of the community has been carried out in thirteen (13) development blocks of Sundarbans**.** Lastly, in this context, extensive studies about the socio-economic status of fishermen pertaining to different regions of the country will be immensely helpful for future planning of development schemes. On scrutiny of literature related to socio-economic aspects of marine fishermen, very limited works have been encountered besides literature available on this direction related to reverine, estuarine, fresh water fisher folk are also scanty.

Though a considerable information on the fish and fisheries, craft and gears biology of different marine fishes of the coastal belt of West Bengal are available but very little on Socio-economics of Fisherfolk (Mukherjee, 1970; Dutta, 1973; CMFRI Pub., 1987;Ghosh, 1994; Anon., 2000; Tewary *et al.,* 2003 and Bandoypadhyay *et al.,* 2003). Many of this information also available in India except West Bengal (Balasubramaniam *et al.,* 2003; Dutta *et al.,*1989 and Pillai *et al.*, 2000). But literature on the socio-economic status, educational level, health information, and living condition etc. of the fisher folk is very limited in this sector. The objectives of the present study are to categories the different class of people involved in different activities in the 'khoties' (fisherman's settlement), health-hazards of fishermen community in the study area and the socio-economic conditions of the traditional fishermen.

MATERIALS AND METHODS

A detail observation on the fish and fisheries, craft and gears in operation and some social aspects of the community has been carried out in thirteen (13) development blocks viz. Sagore, Namkhana, Kakdwip, Patharpratima, Kultali, Mathurapur – I, Mathurapur – II, Joynagar – I, Joynagar – II, Canning – I, Canning – II, Basanti and Gosaba of Sundarbans for three years and on the major landing centers (Census of India, 2001). Data for the present study had been collected on complete enumeration from the study area. A set of questionnaire were interviewed with at least 20 % of each group of fisher folk to assess their various socio-economic parameter like health, income level, family size and literacy level. Health hazards had been also assessed with questionnaire. Profile of activities of fisher folk engaged in the Khoties had been investigated with interrogation among the fishermen community based on which clusterization has been made. All questionnaires and analyses have been presented as Appendix 1, 2 3&4. Data collected on different aspects of socio-economic status of fishermen in study area has been analysed by different statistical tests like average and correlation coefficient. The outcome of these tests have been utilized for formulating policies of this weaker section of the community and will cater as backup for identification of target people for implementing different Government programmes.

RESULTS

Fisheries in Sundarbans

A large population is dependent on fishery activity and capture fisheries is treated as the backbone of Sundarbans economy. Sundarbans boast around 172 species of fishes, 20 species of prawn and 44 species of crabs including two edible crabs. But fisheries in Sundarbans faces some difficult problems which have an impact on the biodiversity, sustainability and livelihood of fish resources and fisher folk viz. shrinking tiger prawn population, indiscriminate fish seed collection, lack of post harvest and other infrastructures, natural calamities such as cyclonic storms and low pressure in Bay of Bengal Sundarbans being the nursery for nearly 90% of the aquatic species of eastern coast, the coastal fishery of eastern India is dependent upon Sundarbans. Jhingran (1982) recorded a total of 172 species from a variety of sources and also mentioned that the diversity of the Hooghly-Matlah estuary increases along an increasing salinity gradient. Numerous species (estimated to be 400) are known to use mangrove swamps as nursery grounds (Jhingran, 1982). Apart from fish species, there are 20 identified species of Prawns and 44 species of crabs including two edible ones. For fishes, the Sundarbans

function as nursery grounds for important commercial species of the continental shelf that are harvested in India and neighboring countries.

The Sundarbans delta provides physiologically suitable environment with respect to temperature, salinity and other physico-chemical parameters. Generally estuary receives abundant supply of nutrients from land drainage and large quantities of organic detritus which is an important source of energy for a wide variety of estuarine consumers. Further, many commercial estuarine fishes grow to maturity there and make up a large part of the near-shore fishery of the northern Bay of Bengal. Other fishes and prawns that spend most of their lives in freshwater descend annually to the estuary for spawning. Therefore, many marine and freshwater prawn and fish require this environment to complete their lifecycle. Most commercially important marine and estuarine fishes are;

Fin Fish species

Lates calcarifer, Hilsha ilisha, Liza parsia, Liza taede, Harpodon hehereus, Plotosus canius, Pompus argenteus, Rhinobatus, Pangasius pangasius, Polydactylens, Chanos chanos, Eleutheronema tetradactylum, Polynemous indicum, Polynemous paradesious and Pama pama.

Shellfish species

Panaeus monodon, Panaeus penicullatus and *Metapenaeus monoceros.*

Crustaceans

Edible crabs mainly *Scylla serrata* and *Neptunus pelagiens*. A large number of Sundarbans populations are engaged in fisheries and allied activities. Fisheries remain to be the sole livelihood of fisherman and their family residing in Sundarbans. Collection of fish seeds and adults especially of *Panaeus monodon*, from the nature is one of the main sources of earning of the coastal fisher folk. The fisher folk are using mechanized as well as non- mechanized crafts. Trawlers, gill-netters, purse seiners, etc. are among mechanized crafts and plank built boats, dugout canoes and catamarans are under non mechanized crafts. A number of fishing gears are being used in Sundarbans viz. trawl nets, purse seines, drift/gill nets, boat seines, fixed bag nets, hooks and lines, shore seines, traps, scoop nets, etc.. At present there are fourteen landing centers for capture fisheries in and around Sundarbans, these are Raidighi, Kakdwip Steamer ghat, Kakdwip Akshaynagar, Kakdwip 8 Number lot, Sultanpur fishing harbour, Diomond harbour, Namkhana, Frazerganj fishing harbour, Gangasagar, Beguakhali, Mayagoalini ghat for throughout the year and Kalisthan, Frazerganj baliara and Gangasagar west for seasonal fishing.

Literacy level

Education becomes imperative to human life therefore, to eradicate illiteracy as education is an instrument of social change and transformation, helps women to overcome the social, cultural and psychological barriers and enables them to participate as equal partners in development. Rate of literacy has been observed to be very frustrating among the fishing families, sex wise literacy percentage has also been recorded in the study area (different 11 landing centre) where shows the poorest percentage i.e., 20 % male, 15 % female respectively. Moreover, highest percentage of literacy has been recorded in some landing centre being 45 % male and 31 % female respectively. It is evident from The Table No.- 5 that the literacy rate of women fisher folk is almost negligible because most of the fisher folk have a positive attitude about education their male children but female education beyond. Primary level is still unthinkable among the fisher folk. It is largely due to early marriage and lack of social security for female children. From area and population, Census (2001) of South 24 Parganas district, it is showed that in respect of total population of the district rate of literacy is >80%. It is depicted that in all the fish landing centre of study area under the coastal belt of South 24 Parganas district, the literacy rate was varied in different development blocks.

Among the literate maximum number of fisher folks completed primary level education while the rest dropout before completing primary education and only very few fisher folk who completed class-VIII level of education get admitted into secondary schools. From my study it was revealed that most of the fishermen want their children to receive education so that they can have a better job and thus improve their social and economic status. But often they cannot help but pull their children out from the school and engage them in fishing to support them family. Beside this most of the fisher families are transient and remain out of home for more than six months along with study children to earn this livelihood from the Khoties which results in discontinuity of education after return.

Family structure & income

Although fishing is the major and the only primary source of income of traditional fishermen, the fisher folk under take various subsidiary activities, which constitute a substantial part of their annual income. These income augmenting opportunities however are very limited. There are very limited options for non fishery related activities such as waged labour in the other sector like agriculture, construction & poultry raising etc. The fishing seasons are mainly commenced from mid October to mid February in all the 'Khoties' whereas, fishing activities done throughout the year very slowly other than peak season. The income group level was assessed through interrogation with 16254 number of fishermen and they are categorised in three groups like income level of Rs. 10,000/- (A), Rs. 10,000/- (B) to Rs. 25000/- (C) and above Rs. 25000/- per annum (Appendix-4). From the table it is depicted that the majority of the fisher folk i.e. 80.36 % were having annual income less than Rs. 10,000/- i.e., poor group (Laya) (A) in all the khoties in the study area. The next order 12.27 % were having annual income Rs. 10,000/- to Rs. 25,000/- (B) i.e., Saudagar and Aratdar and least were in the sound group (7.36 %)(C) i.e., Aratdar. So, it is recorded that highest income group people are generally Aratdar.

From the present observation we show that income of a family is the most important index for getting an idea about the socio-economic condition of the fisher folk. Here their income depends on various parameters such as fish catching rate, weather condition, market price of fish and communication.
However, due to asymmetric sharing system, income distribution showed significant inequality between marginal

and non marginal fishermen from group fishing. In addition about 70-80 % fishermen for their financial help are fully depending on Aratdars or money lenders. Generally they take money from the Aratdar or money lenders about 3-5 % interest per month. In addition, during the fishing season, owners take loans from professional money lenders to meet the running expenses which are not properly covered by the 'dadan' taken from the Aratdars. The fishermen who accompany the fishing units with or without nets also need advance from their Mahajans (owners of fishing boats) to meet their house hold expenses while they are away for fishing. But the advance given by the owners is never adequate to meet their domestic requirements during their absence. Thus they are also compelled to contact further loans from the money lenders. Thus, it is clear that most of the fishermen are indebted to the 'Mahajans'. Next to the Mahajans, the main source of loans is the money lenders. So, the decline of income is the main reason for the indebtedness of the fishermen.

Housing Condition & Family size

Living standard of coastal fishermen's is not so good because mostly they are depended on money lenders or Mahajan. Most of the fishermen lived in very poor housing conditions. Majority of the houses are closely constructed, so their temporary hut with 'Hoogla' thatches. The average family size of the study area was found to consist of 6.7 members. Most of the family house hold are nuclear type but only few households are support joint family system. From the study it is indicated that large number of families were unable to provide two major meals to their children throughout the year while some other lived under debt throughout the life. A very large number of fisher folk did not have more than 3 month's employment in a year. It is also shows that fishermen family size in Hindu society is small in comparison to Muslim society.

Almost all male members over 16 years of age are in fishing. But below 16 years they are treated as child labour, engaged in different fisheries activities such as fish storing, fish drying, and so on. Women also help the fishermen by making and repairing nets etc. aside from this, they are also engaged in the maintenance of the house, collection of fire woods and various income generating activities like poultry rearing to supplement the house hold income. The authority of women in households, their freedom of movement, their economic, educational and other opportunities are not at all satisfactory and they have a much lower status than that of the men in the social hierarchy.

Health Hazards

In all the fish landing centres (Khoti) between two block reveals that fishermen have been facing severe health and hygiene problem (Appendix - 4). Such as diarrhoea, gastro-intestinal disorders, asthma, malaria, typhoid, scabies, helminthesis and particularly nematode infection is very high. There are many cause for suffer from severe disease. These are:

Feeding habit: Most of the people in these Khoties are ignorant of the quality and quantity of the food to be taken at the various stages of their growth.

Unhealthy habitation: The fisher folk where they lived there is no fixed sanitation, tube-well and drainage system. As a result the living position is unhygienic and they suffer from various infections disease, except in some 'Khoties'. The number tubes well are inadequate to meet this requirement, those were provided by Government scheme. Beside these, education is the important factor for release the unhealthy situation. Most of the fisher folk they are not properly educated.

DISCUSSION

The results of the correlation analysis clearly reveal that income and family size is positively correlated (r = 0.4889) to each other and also shows positive correlation on the Income and number of fishermen. As a result of this positive correlation, it is clearly envisages that the more the family size (adult workers), the more will be the annual income. Though the family size and annual income varies from 'landing centre' to 'landing centre'. Because of the above situation the number of fishermen in the landing centre (Khoti) is increasing high day by day. Therefore, family size is an important factor in the fishermen population in the study area and it is desirable to consider its influence in analysing consumer behaviour. Income and number of fishermen (per capita marine production in kg.) in different landing centres are: maximum 3303.0 and minimum 574.0 which is also correlated with each other. So, for total fish production is concerned it has been observed that on an average 3165.38 MT per annum growths in fish production has been recorded during the study period i.e. 2009-2011(Appendix – 3). Therefore, maximum income means more strength of the house hold fisher folk. Income is also interrelated with several other parameters like the consumption pattern, educational level, livestock holding, house type, occupational status, education level and the general living conditions. So, income of a family is the most important index for getting an idea about the socio-economic condition of the people. Further it is a common observation that fishermen population density was very high in some of the khoties where transportation, electrification, drinking facility, proper sanitation and Government supports are in favourable to fishing activity. In order to analyse the socio-economic condition of the fisher folk of marine sector of Sundarbans area was supposed to be accustomed with certain terms like Laya, Saudagar, Aratdar and Sramik. The 'Layas' are the fishermen who land the fish at the landing center. The 'Saudegars' are the people who buy the fish from Laya, dry them and subsequently sell the product. The Aratdars are the stockists. And the Sramik are the labour group. The economy of the coastal belt is completely supported by this fishing business and it is strong enough but the real fact is that the labourers and fishermen engaged in the overall activities are deprived from their actual share of profits in the business. Most of this production is being dried in scaffoldings and transported mainly to north eastern hill region for human consumption. Besides, a good amount of dry fishes were exported in Nepal, Bangladesh and Assam sometimes through illegal way. A bulk production which is mostly unfit for human consumption is being dried on Sandy beach for production of fish meal and used as ingredient of poultry feed. The different types of crafts were used i.e. mechanised and non mechanised in all the khoties under the study area. Of these crafts the most important crafts used in this sector is Salti (Plank built dingi type), may or may not be fitted with 2

cylinder engine usually used for operation of stationary bag net (behundi net). But the common problem is that the manufacture cost of these crafts are much higher that unable to buy independently for fishermen. So, they are forced to indebt from money lenders and resulting increase their poverties. In the study area trawler is usually avoid because shallow nature of the water and finally it is highly expansive for general fishermen.

Apart from craft, gear also used two types. One is Bag net and another is Gill net. But Bag net i.e., 'bhasa behundi' and 'doba behundi' are extremely operated in this sector particularly by the traditional fishermen within 20 km. from the coast. It is fact that the nets are lost any time during fishing which economically loses to fisher folk. Moreover, fishing gears are costly and not easily available, being generally imported from different states of India. Monofilament nets are usually not used except in few landing centres and from this study it is observed that Fishery infrastructures in the area such as definite landing site, boat building repair facilities and net mending are still very poor . So, the lack of infrastructure facilities strongly affects fishermen as well as fishery development in the study area. Regarding percentage of literacy, remote and isolated places without proper schooling facilities in 'khoti' area shows looser percentage i.e. 24 %, 27 %, 30 % & 35 % respectively except in few landing centre i.e. 58 %, 61 % & 76 % respectively and It is also visualised that percentage of male literacy is far better than percentage of female literacy because fishermen have a positive attitude about educating their male children.

Another fact is that, at present day situation when there is a hue and cry for imposing total Ban on child labour, a noticeable population of children are engaged in this fishing business. Everyone in the Khoties is completely aware of the fact that child labour is a banned but it is somewhat an open secret. Yet children are also employed in different activities which is a reason behind high school drop-out in the area and also an influencing factor behind the fact that why some are still unconvinced about the need of population control. They still have the belief that more children, means more earning members. This observation has been proved statistically significant as $r = 0.4889$ when income and family size were tested. They also suffer from the scarcity of drinking water as they do not have sufficient tube well facility in respect of fisher's population. Sanitation facility in this area was record to be very poor though medical facility is available; it is not up to the desired level.

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APPENDIX : 1

Activity profile of different 'khoties' / landing centres assessed through regular observation

(a) Approximate date of starting (fishing) :
(b) Date of closing / closers(fishing) :
(c) Observation of fishing, drying, storing & transporting activities of different Khoties :-
  - i) Name of the collected fishes :
  - ii) Method of drying :
  - iii) Storing :
  - iv) Transporting communication :

(d) Khoti wise involvement of man power in different activities :-
  - I) No. of Sramik :
  - II) No. of Laya :
  - III) No. of Bachhunia :
  - IV) No. of Saudagar
  - V) No of Aratdar

(e) Enumeration, calibration & efficacy study of different Craft & Gears involved in fishing activities in different Khoties.

a) Name of the diff. Gears / net & their mesh size :
b) No. of gears :
c) No. of craft & their specific type : (Measurement of craft)

(f) Catch composition; qualitative & analysis of catch : - (Khoti wise & month wise data to be recorded) Quantitative : Total amount of fish in actual landing out of amount
i) Export amount :
ii) Drying amount :
iii) Rest amount :

(g) Socio-economic status of the people involved in Khoti activities
i) Sanitation facility
ii) Drinking water
iii) Prevalence of different diseases

APPENDIX : 2

Correlation coefficient between characteristics of income and family size of fishermen community

Y/X Annual Income	Family size 2	3	4	5	Family No. 6	7	fx	v	fxv	fxv^2	fxyuv
4000- 7999	10	6	5	8	1	-	30	-3	-90	270	48
8000-11999	3	9	8	6	1	2	29	-2	-58	116	2
12000-15999	4	3	4	3	-	-	14	-1	-14	14	8
16000-19999	1	1	1	6	1	-	10	0	0	0	0
20000-23999	-	1	-	2	-	-	03	1	03	03	1
24000-27999	-	-	1	-	6	-	07	2	14	28	24
28000-31999	-	-	-	2	5	-	07	3	21	63	36
fx	18	20	19	27	14	02	100	0	-124	494	119
v	-2	-1	0	1	2	3					
fxv	-36	-20	0	27	28	06	5				
fxv^2	72	20	0	27	56	18	193				
xyuv	80	38	0	-31	44	-12	119				

$$\text{Here, correlation coefficient } (r) = \frac{\Sigma fxyUV - \Sigma fxU.\ \Sigma fyv}{\sqrt{\Sigma fxU^2 - (\Sigma fxU)^2}\ \sqrt{\Sigma fyv^2 - (efyv)^2}}$$

$$= \frac{}{\Sigma fx} \quad X \quad \frac{}{\Sigma fy}$$

$$= 0.4889$$

APPENDIX NO.- 3

Correlation coefficient between characteristic of no. of engaged fishermen & per capita income per Annum of fishermen

No. of Observations	No. of engaged fishermen (X)	Per capita income per annum (Y)
1	4847	5608.6
2	603	8275.6
3	370	6025.1
4	361	6062.3
5	446	5167.3
6	4896	8915.3
7	3217	7695.9
8	350	4220.6
9	517	4663.0
10	320	4045.6
11	327	4022.6
Total	16254	64701.9

$$\text{Here correlation coefficient } (r) = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{n(\Sigma x^2) - (\Sigma x)^2}\ X\ \sqrt{n(\Sigma y^2) - (\Sigma y)^2}}$$

= 0.4469 (correlation is in significant at 0.5 levels)

where,

n = Number of observation.

Σxy = Summation of individual products of values of x and y

Σx = summation of the x variation

$(ex)^2$ = The x variable is summed and the squared.

ΣY^2 = The Y variables is squared & the summed

$(\Sigma Y)^2$ = The Y variable is summed and the squared

APPENDIX NO.- 4 : Details of literacy rate, income level and health hazards among the fishers under study area.

Number of the landing centre	% of literacy Male (in %)	Female (in%)	% of income level (Rs.) Per annum A (< Rs. 10,000)	B (> Rs. 10,000)	C (> Rs. 25,000)	Health Hazards if any with Particulars.
1	31.5	20	72	18	10	
2	45	31	82	12	06	
3	20	15	76	15	09	Asthma,
4	25	14	79	11	10	Descentary,
5	37	21	75	14	11	Diarrhorea,
6	36	25	76	16	08	Gastrointesti
7	35	18	81	14	05	nal disorder,
8	20	15	87	08	05	Malaria, and
9	16	11	82	11	07	Helminthesis,
10	17	13	86	07	07	etc.
11	19	15	88	09	03	

Data analyzed on the total sample size of 16254 and collected from 11 potential landing centre of 13 developmental blocks of Sundarbans.