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**ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ON THE ECOLOGICAL
ASPECTS AND SOCIO ECONOMIC STATUS OF FISHERMEN COMMUNITY AT
PURI SEA BEACH (BAY OF BENGAL) IN ORISSA**

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ABSTRACT

Orissa, the maritime state along the east coast of India, has a coastline of 480 km. In the last few decades there has been tremendous pressure on the coastal zone for the development of fisheries, aquaculture, and urban settlements. Most important aspects of life at puri sea beach is the poor poverty-stricken people called the fishery community locally called "Nolia". They earn their live-hood mainly from the fishing in sea and assisting the visitors of inland and abroad. About hundreds of families of such fishing community below poverty live on the shore of Bay of Bengal from time immemorial belonging to the different parts of India. Since they share the economic aspects and prospects of Puri, are still today badly neglected and set aside in the corner of the society and therefore community development at Puri is incomplete without the prospect of such community. Their education, health care, social-interaction, cultural practices and economic status are need to be reached and thus well planed research work has been undertaken to reveal the mystery of their life systems in accordance with the life of Original inhabitants of Puri. So the present aim is to assess the impact of environment on the ecological aspects and Socio Economic Status of Fishermen Community at Puri Sea Beach (Bay of Bengal) in Orissa.

Keywords: Socio Economic Status, Nolia, Fisheries, Aquaculture, Orissa

INTRODUCTION

Orissa, the maritime state along the east coast of India, has a coastline of 480 km. In the last few decades there has been tremendous pressure on the coastal zone for the development of fisheries, aquaculture, and urban settlements. These developments have led to environmental changes, some of which are irreversible, and thus have

become issues of concern for the fisherman community. Some of the important environmental changes taking place i.e seasonal humidity, rainfall, temperature which seriously affects the socio-economy status of the region, and transformation of the coastal ecological aspects. Puri, famous for Lord Jagganath and Bay of Bengal is a holy place and is attracting lots of spectators every year. It's scenic beauty and vast plain sea beach as well as temples of Gods and Goddesses become a place of great pilgrimage. Most important aspects of life at puri sea beach is the poor poverty-stricken people called the fishery community locally called "Nolia". They earn their live-hood mainly from the fishing in sea and assisting the visitors of inland and abroad. About hundreds of families of such fishing community below poverty live on the shore of Bay of Bengal from time immemorial belonging to the different parts of India. Since they share the economic aspects and prospects of Puri, are still today badly

neglected and set aside in the corner of the society and therefore community development at Puri is incomplete without the prospect of such community. Their education, health care, social-interaction, cultural practices and economic status are need to be reached and thus well planned research work has been undertaken to reveal the mystery of their life systems in accordance with the life of Original inhabitants of Puri [1, 2, 3].

The fisherman community are prescribed following criteria for identifying the socially and economically backward groups.

1. Low social position.
2. Lack of general educational advancement among the major section of community.
3. Inadequate or no representation in the field of trade, commerce and industry.
4. Inadequate or no representation in Government service.



Figure 1: Map

Rationale of the Study

Environmental impact and Ecological aspects is the most fundamental requirement for over all development and all round progress of the individuals as well as the society [4]. The nation-wide effort for equalisation of all communities has been intensified. Environmental impact and Ecological aspects is a powerful instrument of social, economic and political change and is related to the long-term national aspirations and the programmes of national development. Equalisation in all aspects has to serve the needs and interests of our society, particularly of those belonging to

weaker sections to elevate their social and economic status. The attitude and interests of the fishermen communities should be properly understood by the educationists, planners and psychologists to put forth their needs and demands properly [5]. Fishermen communities are supposed to join various professions or occupations by virtue of the education they have received. In order to cope up with the modern society and play their role in national development, they should have modernity in attitude and better social and economical modernization [6, 7, 8]. Only then they can adjust to the modern society particularly in era of globalization.

Hence the investigator studied Environmental impact assessment studies on the ecological aspects and socio economic status of fishermen community at Puri sea beach (Bay of Bengal) in Orissa.

A person's self is the sum total of what we can call his," it refer to those perceptions, beliefs, feelings, attitude and values which the individual views as the part of characteristics of himself. A person's concepts of self-influences his characteristics pattern of adjustment, another important aspect of self concept of self esteem. This is that part of the self concept in which we judge ourselves according to the standards we have set for ourselves. It is one's evaluation oneself. People who have a high (positive) self esteem see themselves. As meeting their own standards and they are satisfied with themselves [9]. Those with low self esteem see a discrepancy between what they think, they should be and what they are. They may not be satisfied with themselves. A positives self esteem leads to a high self concept. A person with a high self concept has good feelings about himself and he has more positive feeling about himself and feels more sure of himself than who has a low self concept. The upliftment of socio economic status of fishermen communities with the improvement of environmental and ecological aspects may

not be beneficial to them if they develop poor self concepts.

The study intends to find out answers to the following research questions.

- How far the fisherman communities have modernity in attitude?. How far environmental impact and ecological aspects has socially and economically uplift them?.
- Is their difference in environmental impact and ecological aspects on upliftment of socio economic status of fishermen community?
- Is their difference in socio economic upliftment of rich and poor fisherman communities?
- What about their anti social habits such as, addicted drinking, chewing tobacco, smoking etc ?
- How many of them have better self concept on different infectious diseases and other diseases?
- Is their difference in modernization of Psyc-social environment components include a complex social, Psychological and ecological conditions with reference to cultural values, costume, habits, belives, attitudes, morals, religion, education, occupation, standard of living?.

The study is likely to provide valuable information on development of fishermen community i.e the environmental impact on the ecological aspects and socioeconomic status. The findings of the study may have implications for researchers, voluntary organizations, social workers, psychologists, educationists and administrators. In view of our commitment to provide for the welfare of fisherman communities, the present study seems to be significant. The study may have educational, sociological, psychological and economic significance. All these considerations inspired the investigator to consider the study significant and worth probing.

Objectives of the Study

The study has the following objectives

1. To develop and standardize an attitude scale to assess socio economic status of fishermen communities.
2. To assess the impact of city life at Puri, the fishing community refers to the external inducers and their affect to the milieu of interior system of the organism as a whole.
3. To assess degree of socio economic status of fishermen community.
4. To assess the environmental impact and ecological aspects on socioeconomic status of fishermen communities.
5. To compare the environmental impact and ecological aspects on socioeconomic status of fishermen communities.
6. To assess the impact of psychosocial environment components include a complex social, psychological and ecological conditions with reference to cultural values, costume, habits, beliefs, attitudes, morals, religions, education, occupation, standard of living, availability of health services and social-political organizations.
7. To access and analyse Self-Concept of fishermen communities.
8. To assess degree of Socio Economic status of fishermen communities with regard to attitude towards: cultural values, costume, habits, beliefs, attitudes, morals, religions, education, occupation, standard of living, availability of health services and social-political organizations.
9. To compare Socio Economic status of fishermen communities of different Economic Condition.
10. To find out relationship between Social and Economic status of fishermen communities.
11. To suggest guidelines for better Social and Economic status of fishermen communities.

Delimitations of the Study

The study has following delimitations.

1. The study was conducted on the fishermen communities only at Puri sea beach (Bay of Bengal).
2. The study was conducted mainly on the environmental impact, ecological aspects and socio economic status of Puri Sea Beach.

Concept and Nature of Attitude

Attitude represents the way one feels, think, talks or acts in a particular situation. Attitude is the product of an individual's experiences and has their bases in his inner, acquired habits and the surrounding influences. Attitude is not the opinion of inclination towards different phenomena rather it is the bent of mind of an individual towards objects or phenomena in the environment. An attitude is a description of how one feels about or reacts to other people, places, things or objects. According to L.L. Thurstone, 'attitude is the degree of positive or negative effect associated with some psychological objects'. This definition has been taken as a holistic view of the concept attitude. No doubt an attitude is a mental set which is associated with characteristics or qualities of an object or idea. The development of bent of mind towards that object is always rests on the experiences that an individual receives when

he comes in contact with the object. Therefore, attitude is purely an psychological construct which develop with the individual is graded process of time in association with the object.

An individual's behaviour is determined by his interests, attitudes and values. Attitude represents the way one feels, thinks, talks or acts in a particular situations. Attitudes are the products of an individual's experiences and have their bases in his inner urges, acquired habits and surrounding environmental influences. Attitude means a specific mental state of individuals towards something's according to which his behaviour towards it is shaped. Attitude refers to a mental or emotional readiness to react to situation, persons or things in a manner is harmony with a habitual pattern or response previously conditioned or associated with these feelings. According to Freeman "An attitude is a dispositional readiness to respond to some situations, persons or objects in a consistent manner which has been, learned and has become one's typical mode of response.

Attitude can also be defined as "a feelings or disposition to favour or to be against objects, persons and situations. Different problems aims modification of behaviour and attitudes direct or gives shape to behaviour. The research topic or activity has the following characteristics or natures.

1. There is individual difference in attitude.
2. It is a mental disposition of the individual.
3. It may be overt or covert and it is unlimited.
4. It varies from community to community.
5. It implies a subject-object relationship.

Statement of the Problem

Keeping in view the above stated needs, the investigator decided to select a problem to access the attitude towards studies of a specific communities especially fishermen with respect to their sex, economic condition and locality. Researches in this area are at infancy stage for which the investigator is tempted to study the dependent variable (attitude towards studies) relation to certain independent variable like socio-economic condition and locality.

METHODOLOGY

This study intends to present design of the study, set development of tool, selection of sample, method of collection of data, and techniques of analysis of data.

Design of the Study

Research design is a plan of action of the research work. It is a plan for collecting and analyzing data in an economic, efficient and relevant manner. It is the strategy of investigation. It is the blueprint of the study

conducted by the investigator. The purpose of the present study is to assess and analyse the environmental impact assessment studies on the ecological aspects and socio economic status of fishermen community at puri sea beach (Bay of Bengal) in Orissa. Hence the study is bit of descriptive research work.

Data Gathering Tool

For collection of new and unknown data required for the study of any problem one may use various devices. For each and every type of research we need certain devices to gather new facts or to explore new fields. The devices thus employed are called tools. The selections of tools for a particular study depends upon various considerations such as the objectives of the study, the amount of time at the disposal of investigator, availability of suitable tests, and personal competence of the research to administer, score and interpret the results. Taking these factors into consideration, the investigator used the following tools for collecting data.

Instructions to Respondents

“This is a self-concept inventory. There are few items in it. Against each item there are five responses. Mark a tick (✓) on any one of the five responses given against that item, which is right. There is no right or wrong answer. The right answer is only what they feel about themselves. Give confidence on them that their answers will be kept confidential

and is only meant for research purpose only”.

Scoring Method

The prepared questions is having five alternatives to give his responses ranging from most acceptable to least acceptable description of their self-concept. The alternatives or responses are arranged in such a way that the scoring system for all the items will remain the same i.e. 5, 4,3,2,1 whether the items are positive or negative. If the respondent put tick (√) mark for first alternative the score is 5, for second alternative the score is 4, for third alternative the score is 3, for fourth it is 2 and for last alternative the score is 1. The summated score of all the forty-eight items provide the total score of an individual.

Attitude scale on Socio Economic status of Fishermen

The investigation developed and standardized an attitude scale to assess degree of environmental impact and ecological aspects and Socio-Economic status of fishermen community. The respondents were required to express their agreement or disagreement to each statement in point scale ranging from strongly agree to strongly disagree. The sum of the scores of each statement is the total attitude score of the individual. The investigator through study of literature and consultation with experts selected the

following dimensions of Socio-Economic status.

- (i) Education and rights of women
- (ii) Environmental Impact, Ecological aspect and other social issues
- (iii) Marriage, Family Values and Political Awareness

The investigator developed several statements relating to the above dimensions. It included 40 favorable and several unfavorable statements. While writing the statements the principles suggested by Edward were taken into consideration.

- a) The statement that refers to the past rather than to the present has been avoided.
- b)The statement that may be interpreted in more than one way have been avoided.
- c)The statements that are believed to cover the entire range of the effective scale of interest have been selected.
- d)The language of the statement has been simple, clear & direct.
- e)The statement are short and rarely exceed twenty words.
- f)The words that may not be understood by those who are to be given the completed scale have been avoided.

Editing of Items

The researcher with great care scrutinized the statements. Because the statement is

very much raw in their form. Some of the statements were found highly ambiguous, while some other were found to be irrelevant doubled barrelled statement, ambiguous, duplicate sentences were rejected. Only clear, concise & straight forwarded statement was selected for the state. In this process the investigator also took the advice from his guide experts. Finalizing of the Scale -Final scale was prepared by taking appropriate statements, which were free from defects.

Method of Collection of Data

To collect data from the fishermen communities of Puri sea beach, the investigator visited the beach and their residing areas called as Nolia basti. By the help of the councillor of that area of the Puri municipality, she tried to contact the fishermen. She personally contacted the fishermen and clarified them the purpose of collecting data and assured them that the

RESULTS AND DISCUSSION

The significance of difference in mean Socio-economic status scores of different categories of fishermen are given below in **Table 1**.

Attitude on Education and Rights of Women

Frequency tables of the scores of the respondents of different categories on Education and Rights of Women were prepared and the Mean marks and Standard Deviations were calculated for Fishermen of

data will be utilized for research purpose only. He tried to develop rapport with the fishermen and encouraged them to provide authentic and reliable data. The investigator tried to create a conducive environment for administration of the tool. The investigator collected the filled in tools by asking them to answer the pre prepared questionnaires from the respondents with thanks.

Method of Analysis of Data

For analysis and interpretation of data the following statistical techniques were applied.

(i) Descriptive statistical techniques like mean, and standard deviation were used.

(ii) 't' test was applied to find out significance of items.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{SD_1^2}{N_1} + \frac{SD_2^2}{N_2}}}$$

different categories which are given below in **Table 2**.

The average score in the scale on Education and Rights of Women is 60.00. It is evident that the Mean score of female candidates and candidates with higher status are above average whereas in all other cases Mean score is below average. In general a considerable percentage (42.49%) do not have better attitude towards Education and Rights of Women. The significance of difference between mean scores on

Education and Rights of Women between different categories of respondents is given in the following **Tables 3-5**.

Attitude on Environmental Impact, Ecological Aspects and Other Social Issues

The views of the respondents on environmental impact, ecological aspects and other social issues were collected. The scores of the respondents of different categories were estimated and Mean and Standard Deviation were calculated. The scores are given in the following **Table 6**.

The average score on the items relating to environmental impact, ecological aspects and other social issues was 89.08. It is seen that the fishermen communities of different categories have Mean score less than 89.08. The significance of difference of fishermen communities of different categories on the

views on environmental impact, ecological aspects and other social issues are given in the following **Table 7-10**.

The average score on marriage, family, values etc. is 66.00 as there are 22 scores in this regard. It is seen that female fishermen, fishermen with better economic status and Fishermen with better Socio-Economic status have above average scores than their counterparts on Different Categories of fishermen on Marriage, Family values and Political Awareness. All other category of Fishermen has below average scores or in other words they are less modernised with regard to Different Categories of fishermen on Marriage, Family values and Political Awareness. The significance of difference of Gender and Attitude on Marriage, Family values and Political Awareness are given in the following **Table 11-14**.

Table 1: Economic Condition and Social status

Economic Condition	N	Mean	Σ	T
Better	730	124.84	10.42	19.62
Not Better	550	114.87	7.82	

The obtained 't' value is significant at 0.01 level. There is significant difference in mean Self-Concept score of fishermen families of different economic conditions. Fishermen families of better economic condition have better Socio-Economic status than the fishermen families whose economic condition is not better.

Table 2: Mean and Standard Deviation of Attitude Scores of Different Categories of fishermen on Education and Rights of Women

S. No	Category	N	Mean	SD
1	Male Respondent	810	55.03	17.24
2	Female Respondents	470	61.78	18.13
3	Respondents with Better Economic Condition	730	58.42	16.86
4	Respondents with not Better Economic Condition	550	56.30	19.06
5	Respondents with Better Socio-Economic status	615	60.34	17.41
6	Respondents with low Socio-Economic status	665	54.89	17.89
7	Total Respondents	1280	57.51	17.87

Table 3: Gender and Attitude towards Education and Rights of Women

Gender	N	Mean	Σ	T
Male	810	55.03	17.24	6.54
Female	470	61.78	18.13	

The table value of 't' for df 1278 is less than the obtained value at 0.01 level. There is significant difference between male and female respondents on attitude on Education and Rights of Women. Female respondents are more favourable towards Education and Rights of Women than male respondents.

Table 4: Economic Condition and Attitude towards Education and Rights of Women

Economic Condition	N	Mean	Σ	t
Better	730	58.42	16.86	2.07
Not better	550	56.30	19.06	

The obtained 't' value is significant at 0.05 level. There is significant difference between respondents of different economic condition on their attitude on Education and Rights of Women. Respondents of better economic condition have more favourable attitude towards Education and Rights of Women.

Table 5: Socio-Economic Status and Attitude Towards Education and Rights of Women

Self-Concept	N	Mean	σ	T
Better Socio-Economic status	615	60.34	17.41	5.52
Low Socio-Economic status	665	54.89	17.89	

The 't' value is significant at 0.01 level. There is significant difference between respondents of different level of Self-Concept. Respondents with better Socio-Economic status have more favourable attitude towards Education and Rights of Women than respondents with low Socio-Economic status.

Table 6: Mean and Standard Deviation of Attitude Scores of Different Categories on Environmental Impact, Ecological Aspects and other Social Issues

S. No	Categories	N	Mean	SD
1	Male Respondents	810	88.42	21.11
2	Female Respondents	470	90.23	22.16
3	Respondents with Better Socio- Economic status	730	90.52	21.42
4	Respondents with not Better Socio- Economic status	550	87.19	21.67
5	Respondents with Better Socio- Economic status	615	91.28	22.08
6	Respondents with low Socio- Economic status	665	87.06	20.92
7	Total Respondents	1280	89.08	21.59

Table 7: Gender and Attitude on Environmental Impact, Ecological Aspects and other Social Issues

Gender	N	Mean	SD	t
Male	810	88.42	21.11	1.43
Female	470	90.23	22.16	

The 't' value is not significant at 0.05 level. There is no significant difference in the attitude of male and female tribal Fishermen on environmental impact, ecological aspects and other social issues.

Table 8: Economic Condition and Attitude on Environmental Impact, Ecological Aspects and other Social Issues

Economic Condition	N	Mean	SD	t
Better	730	90.52	21.42	2.73
Not Better	550	87.19	21.67	

The 't' value is significant at 0.01 level. There is significant difference in the attitude of fishermen communities of different economic condition environmental impact, ecological aspects and other social issues. The fishermen communities of better economic conditions favour more modernisation in this regard than other.

Table 9: Socio-Economic Status and Attitude on Environmental Impact, Ecological Aspects and other Social Issues

Self-Concept	N	Mean	SD	t
Better	615	91.28	22.08	5.84
Low	665	87.06	20.92	

The 't' value is significant at 0.01 level. There is significant difference in the attitude of Fishermen with better and low Self-Concept on environmental impact, ecological aspects and other social issues. Fishermen with higher Self-Concept favours more towards modernisation with regard to environmental impact, ecological aspects and other social issues than Fishermen with low Self-Concept.

Table 10: Mean and Standard Deviation of Respondents of Different Categories of fishermen on Marriage, Family values and Political Awareness

S. No	Category	N	Mean	SD
1	Male Respondents	810	64.45	16.82
2	Female Respondents	470	68.26	17.38
3	Respondents with Better Economic Socio-economic status	730	68.32	16.68
4	Respondents with not Better Socio- Economic status	550	65.23	17.70
5	Respondents with Better Socio-Economic Status	615	67.41	17.92
6	Respondents with Low Socio-Economic Status	665	64.40	16.29
7	Total Respondents	1280	65.85	17.13

Table 11: Gender and Attitude on Marriage, Family Values and Political Awareness

Gender	N	Mean	SD	t
Male	810	64.45	16.82	3.83
Female	470	68.26	17.38	

The 't' value is significant at 0.01 level. There is significant difference in the attitude of male and female fishermen in this regard. The female fishermen are more modernised with regard to marriage, family values and political awareness.

Table 12: Economic Condition and Attitude on Marriage, Family, values and Political Awareness

Economic Condition	N	Mean	SD	T
Better	730	68.32	16.68	3.17
Not better	550	65.23	17.70	

The 't' value is significant at 0.01 level. There is significant difference in the attitude of fishermen of different economic condition on Marriage, Family Values etc. It is evident that fishermen of better economic condition are more modernised with regard to Marriage, Family, values etc than other fishermen.

Table 13: Socio-Economic status and Attitude on Marriage, Family Values and Political Awareness

Self-Concept	N	Mean	SD	t
Better	615	67.41	17.92	3.13
Low	665	64.40	16.29	

The 't' value is significant at 0.01 level. There is significant difference in the attitude of Fishermen with better and low Socio-Economic status on Marriage, Family values etc. The fishermen with better Socio-Economic status are more modernised with regard to Marriage, Family Values and Political Awareness than other Fishermen.

Table 14: Socio-Economic status of Respondents of Different Categories

S. No	Category	N	Mean	SD
1	Male Respondents	810	207.90	24.26
2	Female Respondents	470	220.27	23.51
3	Respondents with better Economic Condition	730	214.92	24.12
4	Respondents with Not Better Economic Condition	550	209.15	25.12
5	Respondents with Better Self-Concept	615	213.88	23.83
6	Respondent with Low Self-Concept	665	211.10	25.44
7	Total Respondents	1280	212.44	24.72

The average score in the Socio-Economic status scale is 212.00. By considering the average score it can be said that the female fishermen, Fishermen with better economic condition and fishermen with better Socio-Economic condition have better Socio-Economic Modernisation than their counterparts. In general fishermen have just average Socio-Cultural modernisation. They

have yet to be modernised in attitude, Socio-Economic aspects.

Major Findings

Back ground of Fishermen

- In total 1280 fishermen responded to the study, out of which 810 were male fishermen and rest 470 fishermen. Out of the respondents 730 (57.03%) belonged to families of better economic status whereas

rest 550 (42.97%) belonged to families whose economic status was not better.

Socio- Economic Condition

- It was estimated that out of 810 male Fishermen 345 (42.59%) had better Socio-Economic status and rest 465 (57.41%) of the Fishermen had low Socio-Economic status.
- Out of 470 female fishermen 270 Fishermen (57.45%) had Socio-Economic status and rest 200 (42.55%) had low Socio-Economic status. It is seen that higher percentage of female Fishermen had better Socio-Economic status than their counterparts.
- In total out of 1280 Fishermen 615 (48.05%) had better Socio-Economic status and 665 (51.95%) had low Socio-Economic status. It is seen that higher percentage of Fishermen had low Socio-Economic status.
- There is significant difference in Mean Self-Concept score of fishermen of families of different economic conditions; fishermen of better economic condition have higher Socio-Economic status.

Attitude on Education and Rights of Women

- There is significant difference between male and female respondents in attitude on Education and Rights of Women. Female respondents are more favourable towards Education and Rights of Women than male respondents.
- There is significant difference between respondents of different economic condition on their attitude on Education and Rights of Women. Respondents of better economic status have more favorable attitude towards education and rights of women.

Attitude on Environmental Impact, Ecological Aspects and Other Social Issues

- Male and Female fishermen do not differ in their attitude towards environmental impact, ecological aspects and social issues.
- There is significant difference in attitude of fishermen with better and low Socio-Economic condition. Respondents with better Socio-Economic condition have higher attitude towards environmental impact, ecological aspects and social issues.
- There is significant difference in the attitude of fishermen of different economic condition on

environmental impact, ecological aspects and social issues.. The Fishermen of better economic conditions favor more modernization in this regard than others.

- There is significant difference in the attitude of Fishermen with better and low Self-Concept on environmental impact, ecological aspects and social issues. Fishermen with higher Socio-Economic condition favours more towards modernization with regard to environmental impact, ecological aspects and social issues than fishermen with low Socio-Economic status.

Attitude on Marriage, Family Values and Political Awareness

- It is seen that female fishermen with better economic status and fishermen with better Socio-Economic condition have above average scores than their counterparts Marriage, Family values and Political Awareness. All other category of fishermen has below average scores or in other words they are less modernized with regard to Marriage, Family values and Political Awareness.

- There is significant difference in the attitude of male and female fisherman in this regard. The female fishermen are more modernised with regard to environmental impact, ecological aspects, Family values and Political Awareness.
- There is significant difference in the attitude of fishermen of different economic condition on environmental impact, ecological aspects, Family values and Political Awareness. It is evident that fishermen of better economic condition are more modernised with regard to environmental impact, ecological aspects, Family values and Political Awareness.
- There is significant difference in the attitude of fishermen with better and low Socio-Economic condition on environmental impact, ecological aspects, Family values and Political Awareness. The fishermen with better Socio-Economic condition are more modernised with regard to environmental impact, ecological aspects, Family values and Political Awareness than other fishermen.

CONCLUSION

So for the upliftment of fishermen communities the various steps should be taken such as:

1. Stipulation of the necessity and importance of preparing a plan for the management, regulation, conservation and development of fisheries and aquatic resources.
2. Designation of fisheries management areas.
3. Designation of fisheries committees.
4. Designation of management authorities.
5. Licensing of all types of marine fisheries introduced.
6. Inclusion of a section for aquaculture management.
7. Proper steps should be taken to minimize the sanitation problem so as to reduce the health hazards in the fishermen community.
8. Inclusion of provisions to collect a cess on all imported fish and fish products.
9. Stipulating a course of action to be followed in handling fishing disputes.
10. Inclusion of more types of offences and penalties for them.
11. An operational framework/guidelines to establish interagency co-ordination and working relationships should be put in place to ensure that objectives are coordinated and mutually supportive for upliftment of fishermen community.
12. The government should make all out efforts by integrating all the activities such as livelihood, water use, plant use, animal use, cultural and ethical issues, community participatory approach, etc.
13. Noting that there is no long-term strategic/perspective plan, the Team recommends that, apart from implementing an ecosystem based management plan, should evolve an adaptive plan for the next 4-5 years to begin with, with a long-term vision, policy and strategy for the next 10-15 years or up to the year 2020.
14. Illiteracy among the fishing community which depends on the Puri resources for their livelihood and lack of active engagement of youth are areas of major concern which need to be addressed, if we have to educate the fishers on sustainable use of the resources including human resource. It is therefore, recommended to introduce measures for improving the socio-economic status of the local community.
15. Steps may be taken for providing both informal and formal education to select members of the fisher community including youth, old aged and women and also provide some scholarship to

deserving pupil/students who pursue higher studies.

16. The physico-chemical parameters recorded in the Puri lagoon, particularly the pH values, dissolved oxygen concentration, BOD and COD are of concern.

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