

## **CLIMATE CHANGE AND HEALTH STATUS OF FISHER WOMEN- A CASE STUDY OF VISAKHAPATNAM DISTRICT**

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### **ABSTRACT**

*Millions of people around the world depend on fisheries and aquaculture, directly or indirectly, for their livelihoods. During the few past decades, the number of fisheries and aqua-culturists has grown faster than the world's population, and employment in the fisheries sector has grown faster than employment in traditional agriculture. Many people dependent on fisheries and aquaculture – as producers, consumers or intermediaries in inland or coastal areas will be particularly vulnerable to the direct and indirect impact of predicted climatic change, whether through changes in physical environments, ecosystems or aquatic stocks or through impacts on infrastructure, fishing or farming operation or livelihood operation. Climate change is only one among many environmental and anthropogenic stress faced by fisheries and aquaculture. But it is likely to exacerbate the difficulties of achieving sustainable practices. The multiple responses of the 400 sample fisher women by type of diseases revealed that the highest incidence is reported in the case of joint pains and a lowest incidence is jaundice. To summarize the recommendation made in this paper for strengthening health system at all levels while paying particular attention to the most vulnerable in the society is necessity to improve surveillance systems through strengthening access to primary care, improve access to water and sanitation and improve knowledge about hygiene.*

**Keywords:** Climate, Fisher Women, Health Status, Environment

Millions of people around the world depend on fisheries and aquaculture, directly or indirectly, for their livelihoods. During the few past decades, the number of fisheries and aqua-culturists has grown faster than the world's population, and employment in the fisheries sector has grown faster than employment in traditional agriculture. Many people dependent on fisheries and aquaculture – as producers, consumers or intermediaries in inland or coastal areas will be particularly vulnerable to the direct and indirect impact of predicted climatic change, whether through changes in physical environments, ecosystems or aquatic stocks or through impacts on infrastructure, fishing or farming operation or livelihood operation.

In the case of villages of Visakhapatnam district, poor fisher men communities are having tough time battling the unpredictable vagaries of nature as they are losing their homes to the sea and having to travel further and further to catch a dwindling number of fish. The construction of thermal power plants, pharmaceutical companies, ports, shipyard, ship breaking units and sand mining activities are causing coastal level erosion and severe marine pollution. As a result of these, sea resources like fishes are reducing day by day, so that many fisherman communities have to sheer distress and insecurity. Apart from this, an increase in the frequency and intensity of extremes of temperature, nature of work, perception will effect of climate change on human health and well-being. Fishing dependent communities may also face increased vulnerability interms of less stable livelihoods; decrease in availability or quality of fish for food. Within communities and households, existing gender issues related to differentiated access to resources and occupational change in markets, distribution and processing, where women currently play a significant role, may be heightened under conditions of stress and increased competition for resources and jobs and health also effecting from climate change in the case of fisher women.

## NEED FOR THE STUDY

Productive health promoting strategies are needed to protect the world's most vulnerable peoples like fishing community from the effects of climate change on health. "An expected characteristic of global climate change is a likely increase in the variability of environmental conditions. Climate change is expected to increase global average temperature, as well as the number and intensity of heat waves. Climate change is also predicted to result in changes in precipitation patterns, such as flooding or drought expected. Water scarcity and water abundance resulting from flooding or heavy precipitates have been shown to be related to diarrheal diseases including salmonella and cholera, malaria and dengue. An Increase in the frequency and intensity of temperature, way of life precipitation has clear implication for mortality and morbidity. Climate variability and climate change are however not the only drivers of water availability but is determined by other drivers such as population growth and urbanization change in average climate, seasonal patterns and increase in the number and intensity of extreme events like lack of sufficient food, proper hygienic practices. All these factors influence health of fishermen community in general and women in particular.

## OBJECTIVE

In this context an attempt is made to analyze the morbidity pattern of fisher women in Visakhapatnam district.

## METHODOLOGY

The study is based on Primary data. For selecting the sample units, a two stage stratified random sampling design had been used. The first stage-sampling units are the localities in which fisher women live in urban and rural areas in Visakhapatnam district. Fisher women living in urban areas of Vasavanipalem, Pedda Jalaripeta, Sivaganesh Nagar, Kotha Jalaripeta in Visakhapatnam City and fisher women living in rural areas of Nakkapalli and Payakaraopeta mandals of Visakhapatnam district are selected. Of these, 25 percent of the localities are selected at random. Thus, the selected locations for this study are Pentakota, Ratnayammepeta, Pedda Theendrala and Rajayyapeta.

From each of these selected fisher women localities, again 50 fisher women are selected at random in the second stage. Thus a total of 400 fisher women are selected by a pre-designed schedule, in order to obtain social, economic and demographic characteristics of the selected fisher women. More specifically the consumption pattern, incidence of diseases, nutritional and health status, consultation of medical personnel, housing, drinking water of these selected fisher women have been studied.

### Morbidity Analysis

Health status has become an important component of human development measure. Both from the point of view of the nation and individuals there is great necessity to raise the health status of the people. It is only then welfare of the people can be promoted. Even if a county is very rich in material, monetary and human resources, it is of no use, because these resources can not be exploited properly due to widespread ill health of the people. This is the significance of health status.

Morbidity rate is an important indicator of health measurement. The social scientists have a role to play in tracing morbidity and health patterns and in explaining health seeking behavior in order to devise appropriate policies to protect and maintain human health.

An attempt has been made to present trends in health status of fisher women in the rural and urban areas of Visakhapatnam district, as measured by morbidity i.e. type of disease and recovery period. Doctor consulted and medical expenditure in both rural and urban areas has also been analyzed.

### Type of Diseases

The data relating to region wise distribution of fisher women by type of disease is presented in Table -1

**Table 1.** Morbidity Pattern among Sample Population

| S.no  | Diseases           | No of Cases Reported          |                               | Total                         |
|-------|--------------------|-------------------------------|-------------------------------|-------------------------------|
|       |                    | Rural                         | Urban                         |                               |
| 1.    | Fever and Headache | 46 (19.33)                    | 49 (18.35)                    | 95 (18.81)                    |
| 2.    | Diarrhoea          | 32 (13.45)                    | 40 (14.98)                    | 72 (14.26)                    |
| 3.    | Gynaec             | 30 (12.61)                    | 34 (12.73)                    | 64 (12.67)                    |
| 4.    | Anemia             | 33 (13.87)                    | 42 (15.73)                    | 75 (14.85)                    |
| 5.    | Joint pains        | 58 (24.36)                    | 57 (21.36)                    | 115 (22.77)                   |
| 6.    | Skin diseases      | 8 (3.36)                      | 2 (0.75)                      | 10 (1.98)                     |
| 7.    | Blood pressure     | 7 (2.94)                      | 15 (5.62)                     | 22 (4.36)                     |
| 8.    | Diabetes           | 5 (2.10)                      | 12 (4.49)                     | 17 (3.37)                     |
| 9.    | T.B                | 12 (5.04)                     | 7 (2.62)                      | 19 (3.76)                     |
| 10.   | Jaundice           | 3 (1.26)                      | 4 (1.50)                      | 7 (1.39)                      |
| 11.   | HIV                | 4 (1.68)                      | 5 (1.87)                      | 9 (1.78)                      |
| Total |                    | <b>238</b><br><b>(100.00)</b> | <b>267</b><br><b>(100.00)</b> | <b>505</b><br><b>(100.00)</b> |

The above table shows the multiple responses of the 400 sample fisher women by types of diseases. Of all the diseases, with total number of cases at 115 (22.77 per cent) reported joint pains represent the highest percentage, give in followed by 95 (18.81 per cent) women who suffered from fevers and headache, 72 (14.26 per cent) women complained diarrhea, 75(14.85 per cent) women suffering from anaemia, 64 (12.67 per cent) women facing gynaec complaints, 22 (4.36 per cent) women having blood pressure 19 (13.76 per cent) women suffering from T.B, 17 (3.37 per cent) women had ailments of diabetes, 10 (1.98 per cent) women having skin diseases, 9 (1.78 per cent) women having HIV, positive and 7 (1.39 per cent) women attacked with Jaundice.

In the Rural area, people in majority of the households i.e., 58 (24.36 per cent) are suffering form joint pains, and it followed by 33 (13.87 per cent) women who faced anemia ,46 (19.33 per cent) women have fever and headache,32 (13.45 per cent) women having diarrhoea,30 (12.61) women are having gynaec problems,12 (5.04 per cent) women are having T.B,7 (2.94 per cent) women are suffering from blood pressure,5 (2.10 per cent) women are having diabetes,4(1.68 per cent) women are suffering HIV, and 3 (1.26 per cent) women suffering from jaundice. On the other hand in the Urban area 57 (21.36 per cent) reported joint pains, 42(15.73 per cent) women are suffering from anemia, 40 (14.98 per cent) women complained diarrhoea, 49(18.35 per cent) women have fever and headache, 43 (12.73 per cent) women faced gynaec problems, 15 (5.62 per cent) women are having blood pressure,12 (4.49 per cent) women are suffering from diabetics,7 (2.62 per cent) women have T.B,5 (1.87 per cent) women faced HIV,4 (1.50 per cent) women had jaundices. In both rural and urban the highest incidence is pertaining to joint pains and a lowest incidence is regarding jaundice.

### Morbidity Levels and the Recovery Period

The diseases by the recovery period indicate how much man hours are lost due to disease. This is also an indication of loss of income and general welfare of the family. The statistical analysis relating to the distribution fisher women by recovery period is presented in Table-2

**Table 2.** Distribution of Fisher Women by the Recovery Period

| Period of recovery measured in weeks | Rural                         | Urban                         | Total                         |
|--------------------------------------|-------------------------------|-------------------------------|-------------------------------|
| <1 week                              | 110<br>(46.22)                | 120<br>(44.94)                | 230<br>(45.55)                |
| 1-2 weeks                            | 70<br>(29.41)                 | 80<br>(29.96)                 | 150<br>(29.70)                |
| 2-4 weeks                            | 40<br>(16.81)                 | 50<br>(18.73)                 | 90<br>(17.82)                 |
| >4 weeks                             | 18<br>(7.56)                  | 17<br>(6.37)                  | 35<br>(6.93)                  |
| <b>Total</b>                         | <b>238</b><br><b>(100.00)</b> | <b>267</b><br><b>(100.00)</b> | <b>505</b><br><b>(100.00)</b> |

**Note:** The Figures in brackets are percentages to total

Out of 505 cases, 230 (45.55 percent) cases have recovery period of less than seven days, 150 (29.70 percent) cases have recovery period of less than 1-2 weeks, 90 (17.82 percent)

cases have recovery period of 2-4 weeks, 35(6.93 percent) cases have recovery period more than 4 weeks. In the rural area, out of 238 diseases, 110(46.22) cases have a recovery period of less than one weak, 70 (29.41 percent) cases have recovery period of less than 1-2 weeks, 18(7.56 percent) cases have recovery period of 2-4 weeks, 18(7.6 percent) cases have recovery period more than 4 weeks.

On the other hand in the urban areas, out of 267 disease,120(44.94) cases have a recovery period of less than one weak,80(29.96 percent) cases have recovery period of less than 1-2 weeks,17(6.37 percent) cases have recovery period of 2-4 weeks, 17(6.37 percent) cases have recovery period more than 4 weeks. There is not much difference between rural and urban fisher community regarding the recovery period.

### The Doctor Consulted and Not Consulted

The availability and access to health facilities will have profound influence on the health status of the people. It is due to the factor that the mortality rates have come down while there is not much change in the incidence of diseases. The data relating to the distribution of fisher women by disease by the doctor consulted is presented in Table-3

**Table 3.** Distribution of Fisher Women by Type of Doctor Consulted in Sample Households

| Type of Doctor consulted    | Rural           | Urban           | Total           |
|-----------------------------|-----------------|-----------------|-----------------|
| Not consulted               | 60<br>(25.21)   | 40<br>(14.98)   | 100<br>(19.80)  |
| Native doctor (unqualified) | 40<br>(16.81)   | 20<br>(7.50)    | 60<br>(11.88)   |
| R.M.P(semi-qualified)       | 70<br>(29.41)   | 95<br>(35.58)   | 165<br>(32.68)  |
| M.B.B.S(government)         | 50<br>(21.00)   | 65<br>(24.34)   | 115<br>(22.77)  |
| M.B.B.S(private)            | 18<br>(7.57)    | 47<br>(17.60)   | 65<br>(12.87)   |
| Total                       | 238<br>(100.00) | 267<br>(100.00) | 505<br>(100.00) |

**Note:** The Figures in brackets are percentages to total

Out of 505 cases reported, 100(19.80 percent) have not approached any doctor at all and 60 (11.88 percent) cases have approached native doctor (unqualified).Native doctor is one who lives in the village, and practices either Ayurveda or Homopathy.165 (32.68percent) cases are treated by the Registered Medical Practitioners (RMP).115 (22.77 percent) cases consulted the government doctor and 65 (12.87 percent) cases consulted the qualified private doctor.

In rural area, Out of 238 cases reported, 60 (25.12 percent) have not approached any doctor at all and 40 (16.18 percent) cases have approached native doctor.70 (29.41 percent) cases are treated by the R.M.P, 50(21.00 percent) cases consulted the government doctor and 18(7.57 percent) cases consulted the qualified private doctor.

On the other hand in the urban areas, Out of 267 cases reported, 40(41.98 percent) have not approached any doctor at all and 20 (7.50 percent) have approached native doctor.95 (35.58) cases are treated by the R.M.P, 65 (24.34) cases consulted the government doctor and 47 (17.60percent) cases consulted the qualified private doctor. These figures clearly indicate that the percentage of those who have not consulted and those who approached native doctor is higher in rural areas compared to urban areas. In either case the percentage of those consulting R.M.P is higher. Those consulting M.B.B.S (private) are more in urban areas. These rural- urban differences are due to greater availability of health facilities and awareness in urban areas.

### Morbidity and Medical Expenditure

The data relating to distribution of fisher women by expenditure incurred on the medical care is presented in Table-4.

**Table 4.** Distribution of Fisher Women by Annual Medical Expenditure

| <b>Expenditure<br/>(In Rs)</b> | <b>Rural</b>                   | <b>Urban</b>                   | <b>Total</b>                   |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| < 500                          | 110<br>(46.21)                 | 60<br>(22.47)                  | 170<br>(33.60)                 |
| 500-1000                       | 75<br>(31.52)                  | 90<br>(33.71)                  | 165<br>(32.67)                 |
| 1000-1500                      | 35<br>(14.71)                  | 70<br>(26.22)                  | 105<br>(20.79)                 |
| >1500 and above                | 18<br>(7.56)                   | 47<br>(17.60)                  | 65<br>(12.88)                  |
| <b>Total</b>                   | <b>238*</b><br><b>(100.00)</b> | <b>267*</b><br><b>(100.00)</b> | <b>505*</b><br><b>(100.00)</b> |

**Note:** The Figures in brackets are percentages to total, \* indicates those women who disease more than once

Out of 505 diseases, 170 (33.60 per cent) diseases have been treated by spending less than Rs.500, 165 (32.67 per cent) diseases between Rs.500-1000, 105 (20.79 per cent) diseases between the1000-1500, and 65 (12.88 per cent) diseases above Rs.15000 have been spent for expenses -towards medical expenses per month. In rural area, out of 238 diseases, 110 (46.21 per cent) diseases have been spending less than Rs.500, 75 (31.52 per cent) diseases between Rs.500-1000, 35 (14.71 per cent) diseases between Rs.1000-1500, and 18 (7.56per cent) diseases above Rs.1500 have been spent towards medical expenses. This clearly shows that the immediate need of the rural women is to have some first aid for small ailments to their door steps. This will help a long way to infuse confidence towards the government. They will be receptive to any state sponsored programme like family planning and immunization.

On the other hand in the urban area, out of 267 diseases, 60 (22.47 per cent) diseases have been treated by spending less than Rs.500, 90 (33.71 per cent) have been treated by spending between Rs.500-1000, 70 (26.22 per cent) diseases between Rs.1000-1500, and 47 (17.60

per cent) diseases Rs. above 1500 have been spent towards medical expenses. Comparatively urban fisher women seem to have been spending more on medical expenses.

## CONCLUSION

Climate change is only one among many environmental and anthropogenic stress faced by fisheries and aquaculture. But it is likely to exacerbate the difficulties of achieving sustainable practices. However, the magnitude and direction of climate change specific stress will vary from one aquatic system to another, or may play only a small role when compared to other stress. Climate change may also offer win- win outcomes where adaptation or mitigation measures improve economic efficiency and resilience to climate and other change vectors.

The multiple responses of the 400 sample fisher women by type of diseases revealed that the highest incidence is reported in the case of joint pains and a lowest incidence is jaundice. There is not much difference between rural and urban fisherwomen regarding the diseases by the recovery period. Out of 505 cases reported 100(19.80 per cent) cases have not approached any doctor at all. In the remaining, 165 (32.68 per cent) cases treated by the R.M.P doctor, and only 65 cases consulted the qualified private doctor in the total sample households. Figures clearly indicated that urban fisher women are comparatively at better position compared to rural fisher women and it may be due to the availability of health facilities and awareness. The analysis of expenditure incurred on the medical care revealed that urban fisher women seem to have been spending more on medical expenses than the rural women. It may be due to awareness and availability.

To summarize the recommendation made in this paper for strengthening health system at all levels while paying particular attention to the most vulnerable in the society is necessity to improve surveillance systems through strengthening access to primary care, improve access to water and sanitation and improve knowledge about hygiene.

Improvement laboratory facilities and efforts to standardize diagnosis and reporting make better use of the few existing early warning systems for particular diseases. It is necessary to educate fisher women to combat the hazards of climate change. Promotion of social security schemes like micro- insurance and health insurance for fisher women is another measure to assist fisher women to withstand effects of climate change. Finally a lot can be done only if the government extends good supports as the sea is their life and coast is their right. Government should increase the health facilities for the benefit of fishermen community in general and fisher women in particular.

Indeed the introduction of appropriate policy and measures go a long way in enabling fisher women to with stand the incidence of climate change. Which will in-turn will have good impact on their welfare.

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