

Impact of Cyclone *Amphan* on marine fisheries of West Bengal

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West Bengal has three coastal districts, namely, North 24-Praganas, South 24-Praganas and East Medinipur with a coastline of 158 km. With 59 marine fish landing centres, 76,981 fishermen households comprising of 3.8 lakh fisherfolks who are mostly traditional fishermen (Marine Fisheries Census, 2010) West Bengal contributes about 6-8% of the total marine fish landings of India. The predominantly exploited resources are Bombay duck, anchovies, Hilsa, ribbon fishes, sciaenids, pomfrets, catfishes, flatfishes, penaeid and non-penaeid prawns. Cyclones and storm surges are frequently occurring natural calamities in the state. On 20th May, 2020 the super cyclonic storm, *Amphan* caused wide spread damage whose provisional estimates of damage in the marine fisheries sector of West Bengal is presented. Due to travel restrictions in force to curb the spread of COVID-19, data was mainly collected by interviewing affected stakeholders over video conferencing. The published media reports were also collected and corroborated with the information provided by the Department of Fisheries, West Bengal to arrive at conclusions. The information on fishing

crafts and gear loss (fully and partially damaged), infrastructure losses (fully and partially damaged houses), employment and livelihood loss and life loss were collected from secondary sources and also through telephonic conversation with various officials.

The financial losses in the marine fisheries of West Bengal due to the cyclone *Amphan* was estimated at ₹31.77 crores (Table 1).

Losses due to damage of fishing gears were not recorded. District-wise the highest numbers of partially damaged crafts were in South24-Paraganas (549), followed by East Medinipur (344). In no districts were crafts fully damaged and losses due to craft damages across the districts were estimated at ₹1.984 crores (Table 2).

About, 8,188 houses were damaged during the cyclone with highest number recorded for South24-Parganas (7,254) followed by East Medinipur (934) and total losses across the affected districts were estimated at ₹24.872 crores (Table 3).

Table 1. Preliminary assessment of damage to marine fishery in West Bengal (₹Lakhs)

Item damaged	Approx. Financial Loss
Partially damaged trawlers	42.50
Partially damaged motorized gill netters	86.75
Partially damaged non-motorized traditional crafts	69.15
Employment and income loss of fishermen	276.44
Employment and income loss of marketing and processing persons	214.60
Partly damaged houses	1071.20
Fully damaged houses	1416.00
Total	3176.64

Data Source: Enumerators, Survey personnel and officials of Department of Fisheries, Govt. of West Bengal

Table 2. Economic loss due to craft damage due to Amphan Cyclone in West Bengal

District	Trawlers (₹ lakhs)	Motorized Gill netters (₹ lakhs)	Non-motorized traditional crafts (₹ lakhs)	Total (₹ lakhs)
East Medinipur	26.00 (52)	41.75 (167)	18.75 (125)	86.50 (344)
South24-Paraganas	16.50 (33)	45.00 (180)	50.40 (336)	111.90 (549)
Total	42.50 (85)	86.75 (347)	69.15 (461)	198.40 (893)

Figures in bracket indicate number of units. Trawlers partially damaged economic loss @₹50,000 per unit. Motorized Gill netters partially damaged economic loss @₹25,000 per unit. Non-motorized traditional crafts partially damaged economic loss @₹15,000 per unit

Table 3. Loss through house damages

District	Partly damaged houses (₹ lakhs)	Fully damaged houses (₹ lakhs)	Total (₹ lakhs)
East Medinipur	18.00 (90)	422.00 (844)	440.00 (934)
South24-Parganas	1053.20 (5266)	994.00 (1988)	2047.20 (7254)
Total	1071.20 (5356)	1416.00 (2832)	2487.2 (8188)

Note: Figures in bracket indicate number of units. Partly damaged houses @₹20,000 per unit. Fully damaged houses @₹50,000 per unit

Table 4. Employment and income loss of traditional fisherman of West Bengal due to Amphan Cyclone

District	Number of fishermen affected	Days lost per fishermen	Average income per day (₹)	Total Employment lost (man days)	Total income loss (₹ lakhs)
East Medinipur	2527	10	400	25,270	101.08
South24-Parganas	4384	10	400	43,840	175.36
Total	6911	10	400	69,110	276.44

Table 5: Employment and income loss in marine fish marketing and processing sector

Name of the district	Active Traditional Fishermen (Approx.)	Fishermen related to auction, trade, small businessmen etc. (Approx.)	Fishermen related to Dry Fish and allied to fry fish processing (Approx.)	Miscellaneous (Approx.)	Total income loss* (₹ lakhs)
East Medinipur	1651	826	660	165	82.55
South24-Parganas	2641	1321	1056	264	132.05

*@₹500 /day for 10 days

Altogether, 6911 fishermen were affected due to the cyclone across the two coastal districts of West Bengal with the highest in South 24-Parganas, followed by East Medinipur. Due to the advance warning of India Meteorological Department (IMD) and local administration, fishermen were not allowed for fishing and other activities since 15.05.2020, which averted the loss of human lives. They have lost their income/livelihood for nearly 10 days, from 15th to 25th May, 2020 was estimated about ₹2.76 Crores. Highest loss for the same was recorded for South 24-Parganas followed by East Medinipur (Table 4). The total employment and income loss in marketing and processing sectors related to marine fisheries was estimated at ₹2.15 crores (Table 5). There was no information on the damage of

marine hatcheries or any mariculture installations across the coastal districts of West Bengal.

The fisher folk highly impacted by the *Amphan* cyclone were mostly first time victims of such a huge cyclone. They suffered loss of craft, damage to houses and employment and income loss and Governmental support (48%) provided was perceived as not enough. Local village committees should be sensitized with appropriate adaptation and mitigation options for dealing with natural disasters. Customized training programmes for increasing the awareness of natural disasters such as cyclones and floods are required as in recent years they are predictable with a reasonable degree of certainty.