

CONCLUSION

The present study observed the fishery and the biological characteristic viz., length – weight relationship, sex ratio, and length at first maturity (L_{m50}), breeding season, fecundity, feeding habits and feeding intensity. Stock status of the species covering age and growth, mortality, exploitation and recruitment patterns were also studied. Results were observed on maximum sustainable yield (MSY), stock, biomass and yield per recruit which are useful reference points for monitoring and regulating the capture of *P. monodon* from Digha coast. The length at first capture was 16.86 cm for males and 19.36 cm for females and the length at first maturity for females was 16.35 cm. This indicated less pressure on spawning stock as they get a chance to reproduce before being caught. From the yield and biomass curves for males and females, it was evident that maximum yield and yield/recruit was obtained by tripling the present fishing level. The maximum yield and yield per recruit obtained by increasing the present fishing effort by 200% for males was 164.18 t and 23.441g, whereas it is 140.63 t and 20.078 g at the present fishing effort. At the increased effort, the increase in relative yield would be 16.7%. In the case of females, the maximum yield and yield per recruit obtained was 161.82 t and 42.894 g at thrice the present fishing effort, whereas it is 140.65 t and 37.283 g at the present fishing effort. The increase in relative yield at the increased effort would be 15.05%. The shrimp trawl fishery at Digha targets a wide variety of penaeid prawns, and not *P. monodon* alone. Therefore, recommending an increase in effort to the tune of 200% may not be advisable as other penaeid resources could easily be overexploited as a result. Moreover, the average increase in yield is only close to 16% by tripling the effort and this could make fisheries economics unprofitable and unsustainable. Therefore, it is recommended that the present fishing effort to be maintained for sustainably and optimally exploiting the shrimp resources, particularly *P. monodon* along the coast of Digha in northern Bay of Bengal.

Recruitment pattern revealed that young ones were recruited into the fishery for most months of the year with one pulses in the recruitment pattern, *viz*, for males from April – August and this pulse produced on an average 75.06% of the recruits and for females from May - August and this pulse produced on an average 68.54% of the recruits. Annually, 10.78 million were recruited into the fishery.

The breeding season observed was January and June. However, in West Bengal, the period of trawl ban is from 15th April to 14th June. It is therefore suggested to extend the ban period till the end of June (June 31st), to enable the brooders to spawn and release their eggs before being caught.