

For the Recovery of Fish Stocks in the Seto Inland Sea

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The total amount of fisheries' yield in the Seto Inland Sea in 1999 was 571 thousand metric tons, consisting of 256 thousand MT by fishing and 315 thousand MT by aquaculture. About 40 thousand people engaged in the fishing and aquaculture industries, earning 129 billion yen by fishing and 89 billion yen by aquaculture. The averaged annual catch for the Seto Inland Sea by fishing was 13 MT/km².

Division of the Seto Inland Sea into periods in terms of eutrophication levels was made: before 1960 when the red sea bream was abundant with ecological divergence (before eutrophication), from 1960 to 1990 when the biomass of anchovy was large (eutrophication), after 1990 when the jellyfishes were abundant (excessive eutrophication or high N : P ratio). The fish production is to be shrunk in the sea of jellyfishes.

Actually, the amount of catch was 462 thousand MT in 1982 and it decreased 265 thousand MT in 1993, with decreasing 43% for these twelve years, then containing the same level. A big reduction was seen in the catches of the spotlined sardine, anchovy, Spanish mackerel, tiger puffer, short-necked clam, and sea cucumber and so on.

The tiger puffer and Spanish mackerel were abundant as predators in the sea of anchovy. The biomass of anchovy was at its maximum in 1986 and decreased to less than one third level in 1996. The stocks of tiger puffer and Spanish mackerel decreased greatly because of the higher fishing pressure compared that in the anchovy stock.

The fishing power of individual fisheries targeting those species increased substantially by improving on fishing vessel and gears used resulting the excessive fishing effort. The present fisheries take the fish stocks excessively and in advance.

Hence, it is necessary to promote the resources management type fisheries so as not to land the fish stocks in recruitment overfishing, and to recover the Seto Inland Sea from the sea of jellyfishes to the sea of anchovy with improving the eutrophication levels.