

Who pay the cost of the reduction of the large scale purse seine vessels?

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Abstract

Skipjack migrates from the equatorial region to the high latitude. Skipjack fishery is mainly exercised by the purse seine vessels. The stock evaluation of the skipjack is plentiful. However, in 2009, the catch of the Japanese offshore skipjack fishery declined. WCPFC Scientific Committee sixth regular session summary report mentioned that the possibility of the negative effect for the high latitude skipjack fishery caused by the high level of the catch at the equatorial region. Japan proposed the reduction of the large scale purse seine vessels at the WCPFC seventh regular session. In this paper, we construct a game-theoretical model comprised of three players (Japanese DWFN, Other countries DWFN, and Japanese offshore fishery). In this situation, if the countries reduce the fishing capacity, who pay the cost and how to burden the cost? To consider this, we take the cooperative game approach. Specifically, a characteristic function game approach is applied to describe the sharing the cost of the reduction of the capacity. We find that the cost of the reduction of the fishing capacity is mainly paid by the group that the less contributes to the reduction. It may indicate Japan should burden the reduction cost mainly in order to keep the skipjack migration to the high latitude.