

Marine life

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As the world population is raising by a significant number each year, we are facing the great problem in finding enough food to feed our entire population. Besides the development of technology in the effort of producing the adequate amount of food, it is true that we are still heavily reliant on our environment by making use of the available resources that nature gives us. The issue is that we are overexploiting the natural resources and ignoring how it might affect us as a society.

More specifically, in the threats that are facing the ocean, we are overfishing the marine creatures for consuming purposes as well as commercial purposes. To reduce the overfishing problem, quotas have been applied to limit the amount of fish that fishermen can catch each year to maintain a healthy marine environment, known as "catch shares". So, how does the existence of catch share really relate to economics?

Catch shares describes the technique of managing fisheries, which is dedicated to every individual or organization in charge of catching fish, imposing a limit to the fixed share of fish or fishing areas they are allowed to catch from. Also, the Total Allowable Catch (TAC) is set with percentage of the given limit catch shares divided among the fishermen, known as a "catch limit". In order to come up with these terms, the policy makers have to consider the current marginal benefits as well as the current costs.

The marginal cost of the traditional fisheries outweighed its marginal benefit when the cost is the damage on our marine life and biodiversity, or the danger in fishermen's lives and the benefits we receive in fisheries is much less. Therefore, the optimal decision is made with the presence of the catch

shares to reduce the marginal cost by limiting the fisheries to reserve the biodiversity; also indicating the fishing season so that the fishermen would not have to face the severe weather conditions.

Catch share policy not only brings positive effects on marine life but also brings great positive economic effects on the fishing industry, including fishermen. Traditional fishery based on limited fishing seasons with restrictions, as well as limited licenses, often pushes to a race-to-fish which leads to overexploitation when they tried to catch as many fish as possible in a short period of time and put themselves in risky situations.

It happens because the marginal cost of the fishery is so high with the cost of supplies such as fuel, bait and the danger when fishing in the bad weather conditions, therefore, they tend to capture as much fisheries as they can. It sometimes leads to the case in which the supply of fish is much greater than the market demand, causing excess waste of fish catch. Now, with the catch shares, the fishermen can decide when to go fishing based on the demand of fish in each season of the year.

The catch shares create an incentive for fishermen to maximize the value of fisheries, instead of maximizing the number of fish that they catch. The fisheries, then, have a higher quality which results in a better price in the market. It also avoids the catch of unnecessary creatures - known as bycatch - in the ocean.

Furthermore, catch shares help raise the price of fisheries in the market. As the supply curve decreases due to the limited amount of fish that the fishermen can catch, the shift in the supply curve causes the new

equilibrium, which has a smaller equilibrium quantity and higher price equilibrium. This means that it causes a shortage in the market and consumers are willing to pay more. Therefore, the fishermen receive a better price after the catch shares are implemented, and they are also more likely to follow the reserve policies.

In addition, catch shares are allowed to be bought and sold among the fishermen, similar to the way the stock shares work. The higher the demand in the fisher market, the higher the price of the catch shares are. Therefore, when the demand of fisheries is high, the price of the catch shares is pushed so high that the high cost of shares has made it very difficult for people with little access to capital like coastal residents.

It leads them to the threat of losing their job. In order to go fishing, the fishermen have to purchase bait, fuel and other needed supplies, but their opportunity cost is that they also relinquish the opportunity to earn income through activities other than fishery. So, if the opportunity costs are high - that is, if there are better opportunities to earn income from elsewhere - fishermen are less likely to oppose the proposition of a reserve, especially when there are long-term benefits to its creation, for example, future stock enhancements outside its boundaries. However, if opportunity costs are low and there is an uncertainty in long-term benefits that are perceived, opposition is likely to be high.

Economically, the proposition of catch shares affects the fishing market in decisions made by analyzing the marginal cost and benefit, the opportunity

cost, marginal analysis, and the analysis of the supply and demand of the fisheries market.

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