GEA #2

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Over the past few centuries, fishing has been a major part of the world’s economy. However, overfishing started around 1800s and became a major problem in the mid-19th century. In the last few years, many fisheries were hurtling towards collapse because overfishing had led to the downfall of stocks of fish (Economist, 2012). According to “A rising tide”, Dr Worm and his team predicted that by 2048, the entire world’s fisheries would be collapsed completely, which led to the creation of catch share programs. Catch share programs or Individual Transferable Quotas (ITQs) enabled the privatisation of commercial fisheries in order to prevent stocks of fish from collapsing (Economist, 2008). This paper will discuss more about why market failure occurs, the effects of Catch Share programs, and how fishermen can benefit from not overfishing. In order to do this, the paper will examine and analyse scarcity, marginal benefits and marginal costs, demand and supply, negative and positive externalities, monopoly and antitrust regulations of fish market. In addition, I will also provide an alternative solution of my own.

Overfishing or fish mismanagement has led to scarcity. “Billions of people rely on seafood as a key protein and therefore, traditional fishery management has motivated fishermen to catch as much as possible, without regard to the long-term health of the fishery” (EDF, n.d.). They they understand that overfishing can harm the fish population leading to scarcity and several other costs, such as, downfall of stocks of fish, disruption of the fish habitat and the ocean, etc. However, they don’t care about the long run. “Poor fishing management is the primary cause” (EDF, n.d.). Fishing has increased exponentially since the 1800s because of the absence of a limit, creating a disruption in marine life.

Overfishing led to a surplus of fish in the market. Overfishing leads to the increase of fish production, which increases the supply of fish tremendously. Moreover, according to How do fishermen fish article, “a reason for overfishing is new technology, which makes shoals easier to detect” (Economist 2012). The increase in technology leads to the increase in supply by shifting the supply curve to the right. A surplus occurs when the quantity supplied is much higher than the quantity demanded. Overfishing has led to quantity supply increase exponentially in a very short time. There was a decrease in quantity demanded due to the low quality, unhealthy fish. In this case, quantity supplied must be reduced by using external forces, which will increase the quality of productivity. This will automatically increase the demand for fish in market.

Overfishing has led to marginal cost being greater than marginal benefit. According to the World Bank, “the cost of mismanagement, in loss economic output, is huge: some $50 billion a year” (Economist 2012). The marginal cost is extremely high because the fishermen are not allowing the fish population to rebuild, which causes lower quality, unhealthy fish come into production. Moreover, fish is a renewable resource. However, they will be endangered if the fishermen do not let them rebuild their population. Marginal benefit will keep decreasing over the long run because the catch keeps decreasing and marginal cost will keep increasing. In order to prevent this, several programs started to make sure that the marginal benefit equals to the marginal cost because that is the best option in the long run.

The Catch Share programs will also make sure that the marginal benefits equal to marginal costs. In order to prevent overfishing, Catch share programs were created so that fishermen agree to adhere to strict limits that allow fish populations to rebuild” (EDF, n.d.). In return “these programs will protect the marine environment and maintain healthy fish populations, which will preserve the lives of American fishermen (Leschin, 2016). Because this will work as an asset that fishermen can sell over the long term and when the fishery grows, his stake increases, along with his profits (EDF, n.d.). The marginal cost here is to follow strict rules on fishing and the marginal benefits are maintaining healthy fish population, which will increase profit fishermen over the long term. In economics, rational people think at the margin and try to take the best decision by considering all the benefits and costs. The best option is when marginal benefits equal to marginal costs. These programs make sure that they are both equal so that all the parties are satisfied and enhanced over the long term.

The Measuring the Effects of Catch Shares Program enables fisheries and scarce resource to be managed. In economics, choices must be made because we live in a world of scarcity (Hubbard, 2018). “This project supports healthy ocean ecosystems that can sustain food, jobs, and recreation over the long term. It enables fisheries to be managed in a way that maintains and enhances the economic, social, and ecological benefits” (Measuring the Effects, n.d.). This project helps fisheries to attain their goals, given the scarce resources that can be used. Economists assume that individuals are rational and respond to incentives (Hubbard, 2018). “Overfishing has dropped 60% in federal waters since 2000” (EDF, n.d.) because these projects promised a sustainable life for all the fisheries. More people supported this project because of the benefits they will be getting over the long term i.e. more stable fishing jobs and increased profits. Moreover, this project enhanced the resources (ocean and fish) that the fisheries are depending on by preventing overfishing.

The Catch Share programs make sure that the demand and supply curves meet at the equilibrium, where the market is clear. In the TV show Rotten, a number of fishermen discussed about the problems in the fishing community (David, 2018). In order to prevent this from happening, overfishing must be controlled. This will lead to the supply curve shifting to the left, increasing the price and decreasing the quantity (Chapter 3, Hubbard). This will not only make the demand and supply curves meet at the equilibrium, but also increase product quality, decrease bycatch, and increase profits over the long term.

Overfishing has led to a market failure, which means that the market fails to produce the efficient level of output. “The increase in the supply of fish leads to problems such as lowered product quality, increased bycatch (unwanted fish), safety issues, excess capacity, and lack of profitability” (Allen, 2014). This would cause a major negative impact to fishermen in long run because the price would be low, and the quantity would be high. Moreover, this would cause extinction of fish and disruption the ecosystem. The government, therefore, created negative externalities in order to correct this market failure.

Negative externality consists of sellers, who face increasing marginal costs to produce fish and buyers, who face decreasing marginal benefits of additional fish (Chapter 5, Hubbard). The marginal social cost is greater than the marginal private cost and therefore, an external cost (negative) must be implemented. Too much fish is produced and therefore, Catch Share can be used as a negative externality. It will be efficient because it reduces the amount of output, creating a deadweight loss. These Catch Shares will also result in an upward shifting of the marginal private cost to marginal social cost. In graph 1, the price of fish will rise from market price to efficient price; the quantity is decreased; the equilibrium point will move from market equilibrium to efficient equilibrium. The blue triangular area is the deadweight loss created due to the implementation of Catch Share.

An alternative of Catch Share Program would be a Pigovian tax. A Pigovian tax on every fish caught can also correct a market failure creating negative externalities and helping reach the efficient equilibrium. Negative externality will affect the society but not necessarily in a negative way because it prevents the disruption of the ecosystem and benefits the fishermen in the long run.

Although this negative externality (Catch Share Program) seems like it would protect the ecosystem and benefit the fishermen in long run, it has some limitations. For example, “the most difficult place to introduce market-based conservations methods such as Catch Share is in international waters. Attempts to do so have ended in failure. One problem is that there is simply too much cheating in the open ocean. Even the complete ban on fishing in international waters will not be effective. Dr Worm reckons that 90% of the world’s fish are caught in national waters” (Economist, 2008). Therefore, Catch Share Program might not be the best decision to make when it comes to international waters.

Another example of Catch Share limitation would be one particular seller having market power over a particular type of fish because they do not have a close substitute. This is called Monopoly. Monopolists have no competition and they also face a downward sloping curve. Monopoly is not efficient over the long run causing the price to increase, quantity to decrease, consumer surplus to decrease, producer surplus to increase, and economic surplus to decrease creating a deadweight loss. There are also huge barriers to enter preventing other firms coming in and competing with it (Hubbard, 2018).

Monopoly also creates market power in our society. Market power is the ability of a firm to charge a price greater than marginal cost (Hubbard, 2018). It also lets the seller take control over output decisions influencing both supply and demand. This is not fair to the other sellers. Moreover, it will let the leading seller take advantage of market power because even if they increase their price slightly, they will not lose a lot of consumers because they are the leading firm in market and they also don’t have close substitutes. Market power doesn’t encourage creativity and new products to come into a market. It can also lead to the reduction of output and loss of economic welfare causing market failure.

In order to correct this market failure, we must stop collusion in fish market. Collusion is an agreement among firms to charge certain prices. This would let the sellers work together creating an unfair market in our society. Therefore, anti-trust laws must be implemented, which promote competition among sellers. These will stop the sellers of fish from involving in illegal business practices and by also creating a fair competition in market.

An alternative solution that I came up taking these limitations into account have two parts. First, the government should pass a legal policy to have control over fish market as a whole. This will let the government set price ceiling just like they have control over rent. Price ceiling is a legally determined maximum price that a seller can charge. This will control monopoly and not let a single seller have market power over other sellers. In fact, this will create competition in market because the better the product, the higher and also reasonable the price is for fish, which is also fair.

Second, the government can build a seawall with tight security to keep an eye or even prevent fishermen from fishing in international waters. They are required to have proper, legal IDs in order to be permitted into the international waters. Their information must be noted down before letting them enter the ocean and security must check the amount of fish fishermen catch before they leave the harbour. The solution that I offered can be implemented with the Catch Share program. This way everybody gets a fair chance in market, ends up with profits, and the ecosystem will also be protected.

In conclusion, overfishing is a huge problem that a lot of fishermen don’t care enough to do something about. This will lead to scarcity of fish over the long run disturbing the habitat of fish and the ecosystem. Therefore, Catch Share Programs were implemented to prevent overfishing. Catch Share makes sure there will not be scarcity over the long term; marginal benefits equal to marginal cost; and also prevents surplus in market. It works as a negative externality shifting marginal private cost to marginal social cost creating an efficient market. However, there are some limitations to this program like fishermen fishing in international waters and also creating monopoly. In order to prevent to these, I offered a solution of my own, which include the government passing legal policy to set price ceiling for fish, so all the sellers get a fair chance by preventing market power. In addition, a seawall can be built with tight security to monitor fishermen and their activities.

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