OVER EXPLOITATION

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MAXIMUM SUSTAINABLE YIELD

Maximum sustainable yield or **MSY** is the largest yield (or catch) that can be taken from a species' stock over an indefinite period.

OPTIMUM SUSTAINABLE YIELD

Optimum sustainable yield is the level of effort that maximizes the difference between total revenue and total cost.

or

Where marginal revenue equals marginal cost.

OVER EXPLOITATION

Overexploitation - exploitation to the point of diminishing returns.

Over exploitation by humans has been estimated to currently about a quarter of the endangered vertebrates in U.S. and around half of the endangered mammals.

OVER EXPLOITATION

Overexploitation of natural resources-through unsustainable hunting, fishing, or extracting raw material-has serious implications for biodiversity.

Besides reducing the number of species, it also diminishes diversity within the genetic pool.

Decreasing species abundance impacts more than just the individual species: it disrupts the interaction between species in the ecosystem.

OVER EXPLOITATION

Overfishing is leading to a dramatic population loss of large, predatory fish such as tuna, marlin, swordfish and cod that we prize for food.

One study of these large fish indicates that their populations have declined by 90 per cent since the 1950s - and populations in the 1950s were already depleted.

The Atlantic cod fishery, once the most productive in the world, is now estimated to have less than one per cent of its original capacity.

This radical drop has created a devastating social crisis.

The social costs of overexploitation are high, leaving communities with little alternatives for employment and possibly even food.

CAUSES OF OVER EXPLOITATION

- Because of increased human population
- Methods of harvesting have become dramatically more efficient
- Growth of towns, factories, logging camps, mines creates a cash market for fish and other natural products
- Traditional hunters and fisherman, who formerly harvested primarily for their own needs, begin to supply the cash market
- The fisherman use the cash to buy outboard motors for more efficient harvesting

CAUSES OF OVER EXPLOITATION

- Motor boats allow even middleman to travel longer distances to bring the harvest to market. Often new species are discovered and exploited as a result.
- Warehouse and refrigerators allow the catch to be accumulated at distant collection points.
- International buyers, eager sellers and jet planes make a world market in wild species further encouraging the over exploitation.
- Malay fisherman using motorboats to collect edible sea jelly for sale in high-priced Japanese market.
- Seahorses (*Hippocampus* spp.) is become to more vulnerable to extinction, because Chinese use dried seahorse in their traditional medicine, they believe to have variety of healing powers.

OVER EXPLOITATION

- In China, around 20 tons of seahorses are consumed per year-roughly 6 million animals.

- Whales like blue whale, *Balaena mysticetus*, humpback whale, *Megaptera novaenglie*, gray whale, *Eschrichtius robustus* and right whales *Eubalaena glacialis*, *E.japonica* and *E.australis* are estimated to have fewer than 35,000 individuals remaining.

- Baleen whale bone, spermaceti oil (oil from sperm whale) and being hunted to less than 1000 whales.

- Dolphins also become to rare by accidental catch- they travels with schools of tuna, so thousands of dolphins die in tuna nets each year

OVER EXPLOITATION

- Small whales and dolphins living in estuarine and riverine habitats facing the problems like shipping and boating and pollution.
- Sea turtles killed by commercial fishing boats as by catch.
- Shark trade: shark fin soup-shark fin bring up to $ 300/kg, a single fin of whale shark is $ 10,000.
- Shells of gastropods, bivalves are use as ornamental purpose
- Aquarium fishes-Sea anemone

OVER EXPLOITATION

- 47-50%-fully exploited
- 15-18%-over exploited
- 9-10%-depleted

(Source: FAO, 2000)

OVER EXPLOITATION

THE HINDU 19.05.2010

Oceans' fish stocks could vanish by 2050

Ed Pilkington

More than 20 million people employed in the fishing industry may need to be retrained for other work over the next 40 years if the final collapse of fish stocks in the world's oceans is to be avoided, the U.N. warned on Monday.

The U.N.'s environment branch, UNEP, gave a preview of its green economy report that will be published in October. It said if the world remained on its path of overfishing, by 2050 fish stocks could become uneconomic to exploit, or extinct.

Pavan Sukhdev, head of the initiative, said: "Already 30 per cent of the ocean fisheries have collapsed and are producing less than 10 per cent of their original ability." At the heart of the analysis is the $27 billion in subsidies it estimates is being injected into fishing every year, mainly by developing countries. The U.N. says the subsidies are huge in terms of the scale of the industry, amounting to almost a third of the $85-billion total value of fish caught.

Among those subsidies, the U.N. defines $8 billion as "good", in that they encourage sustainable fishing of healthy stocks. Most of the subsidies are "bad", meaning they lead to overcapacity and exploitation, and about $3 billion of the subsidies are "ugly", leading to the depletion of fish populations.

Among the most egregious practices targeted by the report are inducements to boost the size of trawler fleets that are among the main culprits of overfishing, and subsidies on fuel for fleets. "We're paying ourselves to destroy the very resource on which the fishing industry is dependant," said UNEP director Achim Steiner.

At stake is not just the biodiversity of the oceans, but a substantial chunk of the global economy and the livelihoods that depend on it.

The U.N. estimates there are 3 lion people directly employed in which translates to about 120 including their households, and 5 lion – or about eight per cent o population – taking into accou rect businesses such as packag freezing.

The report is being prepared the Rio+20 summit in Brazil i UNEP refuses to name the worst ers in overfishing, though it says report will contain figures that able readers to "figure out wh problem is". –

(UN EP Green Economy Preview Report)