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# Deterioration of Fisheries and Improvement Procedure of Fisheries: the Improvement Procedure of Inland and Marine Fisheries throughout the World

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***Abstract:*** ***Fisheries are an extremely precious resource in the world. It is delicious food which more than people eat it and elsewhere, it is utilized as raw material for agro-industry and purpose of medicine. During the ancient and medieval era, marine and inland water were exceedingly productive for fisheries and numerous & miscellaneous types of fishes were spontaneously and naturally grown in marine water and inland water. During the ancient and medieval period, fishes were considered unlimited since the productive rate of water for fishes were exceedingly furious and all of the favourable features for grown fishes were excellently appearing in marine and inland water. Else, marine and terrestrial ecosystems were enriched, consequently massive fishes were supplied with sufficient food such as floating vegetation, insects, zooplankton and a lot of animal dead bodies which were supplied as food for massive fishes. Notwithstanding, after the Industrial revolution, the marine water and inland water were polluted and primary producers were massively destroyed. Consequently, the earlier feature of water was rapidly lost and numerous fishes were dead predominantly lacking sufficient oxygen, food and floating plant. Moreover, the cultivators utilized huge amounts of chemical fertilizers, insecticides and poison which merged in canal, ponds, river and ultimately into sea. Consequently, it changed the chemical and physical features of water which greatly reduced the productivity of water.***

***Procedure of Fish Production: If we can return earlier productivity or feature of water, then again can increase huge production of fishes. Several produce steps are given below which many times increase fish production, if we appropriately follow it.***

***Step 1: Pollution of water is a major problem which reduces fish productivity. Ordinarily, vegetation (floating plant on surface water and the bank & embankment covered by vegetation) can absorb huge poisonous elements and liquid. Huge surrounding plants and moderate or few floating plants absorb the pollution and poisonous elements from the water. The poisonous solid, liquids and gaseous elements can possibly be absorbed only by floating plants and surrounding vegetation. Ordinarily, the bank and embankment need to be covered by moderate dense vegetation. Since the covering vegetation decreases adjacent temperature since the sun rays can't directly fall into water which reduces temperature in***

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***water. Although, sun rays are precious and fundamental elements for growing massive fishes. Notwithstanding, intensive and massive sun rays are harmful for fishes since they increase the temperature of the surface water and consequently may change physical features of surface water due to exceeding temperature. Else, leaves of covering vegetation fall on water which increase acidity in water and help to absorb the poisonous elements from the water.***

***Although, more acidity or more alkaline in water is detrimental for the growth of fishes.***

***Step 2: Huge leaves of plants and floating plants increase the acidity in water. Ordinarily, fishes can't tolerate more acidity and it distorts the growth of fishes. Henceforward, infrequently we need applied pure calcium/ lime or calcareous which reduce the acidity of water. Furthermore, the calcium or lime/quicklime chemically reacts with clays and decomposed leaves which results produce a mixture of food for fishes. Henceforth, we need to apply five to seven times lime or quicklime in ponds and tanks since it chemically reacts with decomposed leaves, flowers and roots. Consequently, it creates food for fishes and it reduces the acidity in water.***

***Step 3: For suitable habitats of fishes need 2 to 5 feet clays in ponds, lake, river or sea. The clays less than 2 feet or more than 5 feet clays are harmful for fishes. The sufficient clay (2 feet to 5 feet) creates suitable habitats for fishes. Although, the larger fishes need more clay and it depends on size of fishes. The sandy or silty bottom is mischievous for the growth of fishes and other aquatic life. Micro aquatic life can't grow massively in the silty and sandy bottom of water which is considered the main food for fishes.***

***Step 4: The sunrays are considered extremely precious elements for the growth of massive fishes. Although, huge run ray's is harmful for fishes and it can change the physical features of water. To mention that the catfish, shark catfish etc does not require adequate sunrays. These types of fishes can grow with less oxygen and sunrays. Furthermore, these types of fishes (catfish etc) grow in dirty clay and silty decomposed water.***

***Step 5: Fish like habitats as branches of bamboo or plants which live on branches of bamboo and fragment of plants. It is considered a suitable habitat for fishes since it can't live long in the bottom. Else, the fish floats in the upper layer of water predominantly demanding of oxygen and sun rays.***

***Step 6: For massive fishes to grow up in water, they need a supply of food such as a mixing of carbohydrate (food grain) and protein (rejected animal parts). These fishes grow up rapidly in a short time with a predominantly supply of sufficient foods.***

***Step 7: Infrequently, the water of ponds or tanks need changes after a few years. They need pure water from the underground which keeps balance between quality of water and oxygen.***

***Step 8: The pond and tanks need to be encircled by the embankment since the polluted and poisonous water can't merge with pond's water & tank water from the cultivation land. Henceforward, it needs obstacles contraire to polluted water and poisonous water.***

***Step 9: The temperature is a great factor to keep the quality or productivity of water. The more temperature above 30 degrees Celsius is harmful for fishes and it changes the physical properties of water. Otherwise, less temperature (less than 5 degree Celsius) is harmful for fishes and sun rays & oxygen can't get reach in water. Ordinarily, 7 degrees to 17degrees Celsius temperatures are suitable for fishes and other aquatic life.***

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***Step 10: For cultivation of fishes in ponds or tanks use underground water since the underground water is pollution free and it is extremely clean which is perfect for fish cultivation.***
***Step 11: The more alkaline water is not suitable for fishes. The decomposed leaves of plants reduce alkaline in water and it increases the acidity in water. Although, more acidity is not suitable for cultivation or growth of fishes. Henceforward, moderate alkaline and moderate acidity is suitable for fish cultivation.***
***Step 12: The uncovered surface or partially uncovered surface of water is suitable for fishes. The covering by floating plants generates a barrier for the infiltration of atmospheric water and sun rays which is an extremely precious element for the growth of fishes.***
***If these processes or procedures are appropriately followed then many times increase production of fish cultivation. Although, all types of fish don't need a similar environment.***

***Keywords: Alleviate Pollution, Primary Producer, Quicklime, Vegetation Covering.***

## 1. INTRODUCTION

In our entire solar system, only the earth has water and above 71% of earth is covered by water. Henceforward, water is exceeding precious elements for each life. During the ancient era, people considered fish to be unlimited and humans never consumed the fisheries from the Ocean and Inland water. Although, in these periods water was exceeding productive and numerous & enormous fishes naturally grow in inland and marine water. Moreover, miscellaneous aquatic life was seen in inland and marine water. Since, in this period human intervention was minimal into nature and between natural ecosystems and the food chain there was excellent balance. The food of fisheries (micro plant, phytoplankton, zooplankton, animal dead bodies etc) comprehensively and enormously appeared in inland and marine water. Else, the quality of inland and marine was excellent consequently all aquatic life got supply requirement elements from the water. Notwithstanding, the productivity of water was decreasing after the Medieval period, predominantly the industrial revolution. The quality of water was incessantly reduced for merging of contamination chemical and dirty elements into inland and marine water. Although, industry needs for human welfare and agricultural development involved with industrial improvement.
The marine and inland fisheries: Based on salinity and alkalinity water is divided into two groups- Saline water fisheries and freshwater fisheries. The Ocean, Sea and lake grow saline water fisheries and rivers, tanks, ponds etc grow freshwater fisheries.
If you follow several processes and procedures then we can return earlier productivity of water which will enhance thirteen to fifteen times productivity than the normal productivity.

### Research Elaboration

The inland and marine water have great potential for production of enormous fisheries. Several reasons given below for the rapid degradation of fisheries in marine and inland water.
i ) During the ancient era, the marine and inland water were exceedingly productive for the growth of various types of fisheries. Notwithstanding, in the modern era increased chemical production which merged in inland and marine water. For example, in agricultural land huge chemical fertilizer, insecticide, poison and other harmful elements. This chemical fertilizer,

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insecticide and poisonous element merged through rainwater or irrigation water into tank, pond, river, canal and marine coastal areas. Consequently, massive fishes are killed by chemical reactions and poisonous elements. Else, these chemical and poisonous elements changed the physical and chemical features of water. Consequently, it retards the growth of fisheries since these elements are harmful for each aquatic life. Although, increase of agricultural production requires application of chemical fertilizer, insecticide and poison, it needs accurate and appropriate application on crops and cultivation land.

ii ) Another major reason is for the reduction of fisheries, the accident of petroleum mine and leak of petroleum from the Ship and Steamer. It is immensely harmful for each aquatic life of marine water. Else, it creates a barrier of sun ray and oxygen to penetrate within marine water which has an extensive impact on fisheries and other aquatic life.

iii ) The deficiency of adequate food in inland and marine water eminently reduces the growth of fisheries. During the ancient or medieval period, the Ocean (especially continental shelf) and inland water appeared massive micro plants, dead bodies of the largest animal etc which was considered food of fisheries. Nevertheless, it was reduced to enhancing time and in the 21st century we see extremely low amounts of micro plants, zooplankton, dead bodies of animals etc.

iv ) Climate change is another major reason to reduce fisheries and other aquatic life. The temperature, precipitation, air circulation etc comprehensively impact on growth of fisheries and other aquatic life. During the ancient and medieval era, above 50% of land was covered by dense hardwood and softwood forest. Consequently, the climate was more comfortable and suitable in the comparatively modern era. The precipitation occurred more due to covering land by enormous vegetation and sufficient precipitation kept balance between range of temperature and it supplied huge fresh & clean water inland and marine. As well as the huge amount of pure oxygen which was absorbed by precipitation and ultimately it merged with marine and inland water with precipitation. Albeit, in the modern era the enormous dense softwood & hardwood forest was depleted predominantly for the purpose of extension of agricultural land, infrastructure, Industry and infrastructure. Consequently, it is incessantly increasing worldwide temperature and air pollution. For this activity, the world-wide experienced drought and it greatly reduced the precipitation.

v ) The excessive alkaline and acidity are harmful for fisheries and other aquatic life. Which is reduce the oxygen in water and it retard the growth of fisheries. During the ancient and medieval era, alkalinity and acidity was greatly balanced in inland and marine water. Nowadays, several inland waters are seen as more acidic and several inland waters are seen as more alkaline. It is the main reason for lack of precipitation, enormous vegetation depletion and human activity.

A lot of reasons are responsible for reduction of fisheries from the Ocean, sea, lake, river, pond etc. Industry and infrastructure are essential for human welfare. However, we both need to save nature and natural features and industrial & technological improvement.

In modern era fish cultivation: Nowadays, the production rate of fisheries is extremely low and it is decreasing with enhanced time. The continental shelf of ocean and sea has incessantly lost fisheries and else inland water especially lake, river, tank, pond etc are decreasing fisheries and other aquatic life.

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Although, a lot of farmers are trying to grow and produce fisheries by applying several methods. But it does not comprehensively increase the fish cultivation and it is limited and its cost is extremely high.

## 2. RESULTS OR FINDING

If we return earlier features of water then we increase huge growth and production of fisheries in inland and marine water. Several processes and methods are given below which will many times increase fisheries growth and production. These processes are pure natural and biological processes.

Procedure and methods of inland fish cultivation:

a). Any harmful elements especially chemical elements and poisonous elements can't merge into fish cultivation water (river, tank, pond, canal etc). Since it changed the chemical and physical properties of water and all fisheries occur death. Henceforward, the polluted water from the farming land and industrial sectors can't enter within fish cultivation areas.

b). Ordinarily, in arid and semi-arid regions alkalinity is a major problem in fish cultivation. Since more alkaline water is harmful for fisheries and other aquatic life. The afforestation on the surrounding bank reduces alkaline in water and increases acidity in water. The leaves, embracement, fruit, flower, root etc merge with water and it chemically reacts with water and clay which results in increased acidity in water. Although more than acidity in water is harmful for fisheries and other aquatic life.

The humid tropical and equatorial regions need afforestation on the surrounding banks of water. Since the chemical and poisonous elements absorb just by vegetation and it cleans the water. The leaves, embracement, fruit, root etc chemically and physically react with water and these decomposed organisms gradually absorb the chemicals and poisonous elements from the water. Else, the surrounding vegetation on banks helps to reduce temperature and it gives a shadow on water which is the reason the surface & deep-water temperature can't enhance throughout the year. The medium temperature is comfortable and suitable for fisheries and other aquatic life notwithstanding it these regions experienced high temperature throughout the year.

c). the quicklime or lime or calcium need regular application especially on static water (pond, tank etc) and it needs application two times per month. To mention that during its application you need mixed water with quicklime or calcium and per hectare area of pond and tank need one hundred kg quicklime twice times in a month. The quicklime rapidly reacted with water, organism and clay which resulted in keeping the water clean and it rapidly decomposed the organism. Its application reduces the acidity in the water since more acidity is harmful for fisheries and other aquatic life and the decomposed organisms are considered as food of fisheries.

d) The sufficient clay or depth of clay is very significant for comfortable habitation of fisheries.

The sandy and gravel bottoms are harmful for habitat of fisheries. The depth of clay depends on size of fisheries since larger fishes need more depth clay and smaller fishes need low depth of clay. Although after five or ten years they need excavation of the clay from the pond or tank.

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e). the sun ray is extremely significant for fisheries and other aquatic life. The thoroughly covered by the dense vegetation of the pond and tank are not suitable for fish cultivation. Because, the sun ray is a precious element for the growth of fisheries. Henceforward, the partially covered by dense vegetation on the bank of pond and tank are suitable for fish cultivation. Although, the thoroughly covered by dense vegetation of the larger pond and tank are suitable for fish cultivation since the larger middle portion has space, consequently sufficient sunray fall on larger middle portion.

f). The supply of fresh water during the dry season into ponds and tanks are essential for sufficient growth for massive fisheries. It is a great advantage for sufficient growth of fisheries. Ordinarily, during the wet season each pond and tanks received fresh water from the rainwater. The groundwater is fresh and it is free from pollution. Henceforth, fresh water is supplied into ponds and tanks twice per year which increases the supply of oxygen in water because after a long-time oxygen decreases in the water that is fulfil by supply of fresh water.

g). The massive fisheries need sufficient food for continued growth of fishes. Therefore, the feed of fish needs regular application on the pond and tanks. Although, we can apply rejected fresh animal parts which are long-term to appear in the water.

The procedure and method for increase of fisheries and aquatic life in the marine water.

a). The marine is covered above seventy one percent of the total area of earth, then merely continental shelves are significant for fisheries.

First step for the return of earlier productivity of ocean water is to reduce pollution on water. The fisheries never increase within polluted water.

b) 2nd step, the primary producer (floating plants, micro plant and Phytoplankton) comprehensively and massively increases throughout the continental shelves. Although, it takes a long time.

c) 3rd step, the reduce massive fish catching and stop small fish catching from the Ocean and Sea. Only mature fish caught from the Ocean and Seas and increasingly dependent on Chicken, beef and vegetables.

d). 4rth step, increase the vegetation on the coastal regions of the Ocean and sea and else, increase the biodiversity in the coastal vegetated areas.

e) The temperature and supply of water from the melting glacier have a comprehensive impact on the growth of fisheries. Consequently, the temperate and subpolar maritime regions have great potential for increase of massive & enormous fisheries comparatively than hot tropical and equatorial maritime regions.

If all of these suggestions appropriately and accurately follow then after a long time it will return to earlier features or productivity of marine water. And again, after a long time gradually increase massive and enormous fisheries in the marine water as medieval or ancient period.

## 3. CONCLUSION

The fisheries are considered delicious food and it has monstrous demand as a food, medicine and other. If we return earlier productivity of water, then humans get above 80 percent protein and above 40 percent fat supply from the Inland and marine water which will comprehensively fulfil human demand. If you follow appropriately and accurately above the procedure and method of inland fisheries, then it will increase ten to fifteen times fisheries than the normal production in inland water.

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