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## Pearl Farming: Nature's Hidden Gem

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Although pearl farming is often ignored in discussions about agriculture, it is a sign of new and sustainable farming methods. This article talks about the new field of pearl farming, describing its unique qualities and the many positive effects it has on the environment and society. Pearl farming is a type of agriculture that goes beyond what most people think of when they think of farming. Instead of growing crops on land, it grows beautiful pearls in marine ecosystems. Pearl farming is a unique and valuable business because it combines gem creation with aquaculture. This is what makes it so abstract. Pearl farming also helps protect biodiversity by making marine environments better and giving a home to many different types of aquatic life. Pearl farming has good effects on many parts of society and the environment, in addition to being beautiful. Pearl farming helps rural areas by giving them more ways to make money, and it helps coastal towns by giving them more ways to make money. It also helps local businesses and sustainable development by giving people chances to start their own businesses. The beneficial effects of pearl cultivation are based on environmental sustainability.

**Key words:** Pearl, innovation, sustainability, socioeconomics, entrepreneurship

### Introduction:

One of the most beautiful and timeless natural gems in the world is the pearl. Certain molluscs, like oysters and mussels, make them in their soft tissue. When a small irritant, like a grain of sand or a parasite, gets into the shell, the mollusc secretes layers of calcium carbonate around it. This is called nacre or mother-of-pearl. These layers build up over time to make a shiny pearl. The size, shape, colour, and shine of pearls depend on the type of mollusc and the place where they form. For thousands of years, people have loved pearls for their beauty and rarity. They have been important to many cultures and times in history. Many cultures around the world have used them to decorate jewellery, clothes, and other decorative items to show wealth, purity, and elegance.

### Pearl Farming

Pearl farming, also called pearl cultivation or pearl culture, is the process of raising molluscs like oysters and mussels to make high-quality pearls. This practice started in ancient China and India and has grown into a huge global industry that produces pearls in many sizes, shapes, and colours over the course of thousands of years. Molluscs are carefully cared for in modern pearl farms, both freshwater and saltwater, to make sure they grow and make pearls in the best way possible. The first step is to choose healthy molluscs that can make better pearls. Then, a small bead or piece of tissue is put into their soft tissue through a process called nucleation. This makes nacre, the shiny substance that makes a pearl, come out. A pearl's quality depends on a number of things, such as the health of the mollusc, the quality of the nucleus, and the environment around it. Pearl farming is a long-term solution to the problem of collecting wild pearls. It helps protect natural ecosystems and creates jobs and economic growth in many coastal areas. Technological improvements have made pearl

farming much better, allowing for the production of pearls in a wider range of colours, shapes, and lustres, which has made them more appealing to people all over the world.

## Evolution of Pearl Farming in India

India has a long history of making and using pearls. Ancient records and archaeological finds show how important they were to Indian culture. Traditional methods used natural oyster beds and simple ways to make pearls. The modern era of Indian pearl farming began when scientists started using controlled nucleation and other scientific methods. These methods were based on techniques that were developed in Japan and changed to work in India. Research institutions have been very important in moving the industry forward. The Central Institute of Freshwater Aquaculture (CIFA) in Bhubaneswar, Odisha, India, was set up in 1987 by the Indian Council of Agricultural Research (ICAR) and has been a major contributor. CIFA has greatly improved freshwater pearl farming and encouraged environmentally friendly aquaculture practices across the country through cutting-edge research, training, and technology. People in the Malabar region call Kerala the "mussel fishery zone of India." In the early 1970s, the Central Marine Fisheries Research Institute in Kochi did studies and demonstration trials all over India as part of group farming efforts in Kerala. They came up with simple, eco-friendly ways to farm.

## Grouping pearls according to their quality

There are three main groups that pearls can be put into, which are listed below:

**Natural pearls:** These pearls grow naturally in the environment when mussels swallow something that doesn't belong there. Natural pearls have a small core, or nucleus, surrounded by thicker crystalline pearl nacre. It is not very big and has an uneven shape. The roughness of the surface of a natural pearl comes from the edges of the aragonite crystals that cover it.

**Pearl from the sea:** Made by many different types of marine molluscs, like clams, pearl oysters, common edible oysters, gastropod snails, and scallops.

**Pearl from freshwater:** Saltwater cultured pearls are made in lakes and rivers by different kinds of freshwater molluscs.

**Pearl from saltwater:** Mostly made by three kinds of pearl oysters.

**Freshwater Cultured Pearl:** These pearls are made in freshwater lakes and rivers by marine clams and mussels.

**Pearls from the East:** Natural saltwater pearls from the Orient (which includes Asia and the Far East) are called "Oriental Pearls." People thought these pearls were the most beautiful of all pearls because they had the best shapes and sizes. They had a unique look that combined a deep shine with soft colours that could be seen through their translucent "skins." This feature is known as a pearl's "Orient."

## Conclusion

Pearl farming is a promising new way to farm that is both innovative and environmentally friendly. It shows how aquaculture and gem production can work together to help people and the environment. Pearl farms are good for the environment because they help marine biodiversity and stop habitat destruction, which shows that they care about the environment. From a socioeconomic point of view, they give coastal communities other ways to make money, encourage business ownership, and make local economies stronger. Pearls represent elegance and tradition in culture, and pearl farming keeps skills alive and encourages people from different cultures to work together. Pearl farming shows the way to a strong, responsible, and welcoming future in agriculture by using sustainable methods, caring for the environment, and giving people the tools they need to succeed. With more research, money, and cooperation, its full potential to improve lives, protect ecosystems, and inspire positive change can be reached.

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