

Pareto Optimality indicates the market failure in case of public good.

⇒ Tragedy of Commons: The tragedy of the commons is a theory of environmental economics developed by Garrett Hardin. He used the term in his article published in 1968 to refer to common areas that are not regulated by govt or privately owned and hence subject to intense resource depletion.

Hardin derived the concept of Tragedy of commons by observing the peculiar behavior of herdsman in allowing their cattle into the pasture land in England. The farmers since did not face any private cost for this activity, their incentive is to graze as many cattle as possible on the land. Because all the farmers wants to make

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profit, the land is subject to overgrazing and become useless. This destruction of common pasture land as a result of such kind of action of herdsmen is termed as the tragedy of the commons.

The environmental goods such as atmosphere, oceans, rivers, fish stocks, national park etc. are treated as commons. When environmental goods are available at zero prices & when there are no restrictions on use, the net result will be total misuse or over exploitation of resources.

Solutions: In the context of avoiding over-exploitation of common resources, Hardin believes that human can preserve the commons.

One of the most popular solutions, but less effective is government control of commons. For example, National Park System, the Bureau of Land Management, and the National Forest Service agencies protect the natural resources of the nation's public lands. But due to inefficient management the govt control of the commons seems to be less effective which is reflected in the experiences of Kizhanga National Park.

A more efficient solution is conversion of the commons to private like property by assigning property rights to a group of people who are selected by the people of the surroundings of the common. In this case the selected group has the responsibility for maintaining the common and they are responsible to provide the information about the utilization of the common to general people of that area. This type of controlling system is seen in the use of community

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pond, community field, community forest, community park etc.

Privatizing commons is an efficient economic solution to the tragedy of commons. In the example of pasture land, if land is privately held, the ranchers face very little incentive to overgraze their own land. Instead, privately-held land is allowed to go fallow for a while and herds are rotated from pasture to pasture. Ranchers on private lands face real private costs, and so they count the cost in their decision-making. This leads to more efficient outcomes both productive and distributive point of view.

For effective implementation of these measures the people should be aware of the common resources & they need to change their attitude and behaviour for efficient utilization of those common resources.

### Free-Rider Problem:

Once a public good is provided, nobody can be prevented from enjoying its services. Free rider is a person or organisation who benefits from a public good, but neither provides nor contributes to the cost of collective provision. Thus the people free ride on the efforts of others. The free-riding problem is especially acute in the case of public goods. Because free-rider can not be prevented from consuming