

Common pool resources

The tragedy of the commons

When the first Europeans reached Newfoundland more than 500 years ago, they encountered unimaginably rich fishing grounds off the coast of Canada. They were particularly abundant in cod. Apparently they only needed woven baskets to haul the fish out of the water. This attracted fishers in hordes, first from Europe, then from Canada. An important cod industry grew up in Newfoundland. The annual catch grew steadily, reaching 300,000 tonnes, before downright exploding from 1950 on with the advent of modern factory ships. In 1968 the catch reached its peak at 800,000 tonnes. But then it went into rapid decline. In 1992 stocks collapsed completely: the fishing grounds had been practically depleted. The Canadian government imposed an absolute ban on fishing for cod. Around 30,000 people in the fishing industry lost their jobs. It is still not clear whether cod stocks will ever recover. In this situation there have been only losers: the fish, and the fishers.

How was this possible? The overfishing of cod is an extreme example of the so-called tragedy of the commons or common pool resource dilemma. In economic terms, fish in public waters are 'common pool resources'. Goods of this type have two properties. Firstly, they are freely accessible and can be used by everyone. In other words, no one can be excluded from using them. Secondly, there is rivalry between the different consumers of the resource. The more a person consumes, the less is left for the others. This situation leads to a dilemma. From the point of view of the group of consumers as a whole, it would be desirable for everyone to exercise restraint in their use of the resource. But from an individual's point of view it makes sense to consume as much as possible. And nobody can be prevented from doing so. This is why common pool resources are often overused from the point of view of the community as a whole. Even if everyone recognises this danger, it does not solve the problem. Maybe everyone assumes that the others will continue using the resource. So the resource will be overused in any case, and everyone will bear the consequences. But if you continue to consume the resource you can at least increase your own benefit to some extent.

Headlines relating to common pool resources

- What tuna fish and shared laundries have in common: they are both common pool resources
- The tragedy of the commons: everyone takes too much and receives too little
- If ownership is not defined, people will use it without shame
- The ways out: more government, or more privatisation?

Examples of common pool resources that work

Other examples of common pool resources include drinking water, forests, public traffic routes, shared laundries in apartment blocks and common rooms in youth clubs. But is a tragedy of the commons really unavoidable? Not necessarily. This becomes clear if you investigate the origins of the word 'commons'. The commons is a piece of shared land on which all local farmers can graze their livestock. But this is also where the dilemma arises: Each farmer wants to put as many cattle as possible out to graze on the commons, as any additional revenues in the form of milk and meat accrue directly to the individual farmer, while the group of farmers as a whole bears the costs if the land is overgrazed or ruined. So the chances are that the pasture will be overused. But successful examples in the Alps and elsewhere in the world have demonstrated that under certain circumstances common grazing land can be managed without overuse. This insight earned American economist Elinor Ostrom the 2009 Nobel Prize in economics. The prerequisites for sustainable use include the following:

- The community is clearly delimited (outsiders are not permitted to use the commons).
- Those involved can influence and change the rules.
- Rules are monitored and violations punished.
- There are straightforward mechanisms for resolving conflict.

In large, anonymous societies, especially on a global level, these conditions are not met. This is what makes overfishing and global climate change two particularly acute examples of the common pool resource dilemma.

Other types of goods

Common pool resources should not be confused with public goods. Public goods are also accessible to everyone, but there is no rivalry between consumers. All citizens can profit equally from public goods. An example is a country's defences. But here too there is a problem – from the perspective of self interest there is no point paying for the resource, because you are going to benefit in any case. For this reason it is difficult to fund public goods with voluntary contributions. There is a risk of shortage. Most everyday goods (clothes, food, etc.), however, are so-called private goods. Here there is no rivalry between consumers, but people can (other than with common pool resources) be excluded from consumption. Here the individual ownership rights are clearly regulated, you are only permitted to consume the resource if you pay an appropriate price. This prevents systematic overuse. The essential problem with common pool resources lies in the fact that no individual ownership rights have been defined or are enforceable.

No patent recipe

There are different approaches to resolving the commons dilemma:

Privatisation: Creating private rights of ownership makes common pool resources into private goods. The owner can exclude everybody else from using the resource or demand an appropriate price for its use. Example: Many common pastures have been divided into private plots and assigned to individual farmers.

Limiting use: The state can prevent overuse by way of bans or sanctions. Examples: individual fishing quotas and hunting bans.

Introducing costs/prices: To prevent overuse the state can use incentive taxes or charges to make it more expensive and thus less attractive to use the resource. Example: A CO₂ levy makes it less attractive for people to burden the absorption capacity of the atmosphere with their own carbon emissions.

Solution involving private negotiation: As already mentioned, if the costs of negotiation are low it is possible for members of a group to agree to exercise restraint. If necessary, desired behaviours (social norms) can be enforced by means of penalties. Example: If someone in a building with a limited supply of hot water spends too long in the shower they will be given a hard time by the other residents.

Any solution has its limits. For example, privatisation is not a conceivable response to fishing in the oceans. Added to this, there is no overarching organisation at the international level able to enforce rules. When countless people are involved it is difficult enough to agree on rules. All solutions also involve considerable costs, not least the costs of monitoring and enforcing rules. This means that the solution to a common pool resource problem only makes sense from an economic point of view if the costs of the solution are not worse than the problem itself.

Summary

A common pool resource, in the economic sense, has two main systemic properties:

- Nobody is excluded from using the resource (non-excludability).
- Those who use the resource reduce the benefit for other users (rivalry).

Generally a distinction is made between the following types of economic goods:

	Rivalrous	Non-rivalrous
Excludable	Private goods	Club goods
Non-excludable	Common pool resources	Public goods

Common pool resources are often subjected to more use than would be optimum from the point of view of the overall group of users. This overuse (commons dilemma) is an example of market failure.

In limited, manageable groups this dilemma can be resolved by means of mutually agreed rules underpinned by social norms and sanctions. Alternative solutions are privatisation (creating private rights of ownership) or government intervention by way of bans, sanctions or incentive taxes and charges. A particular problem at the international level is that there is no overarching authority in a position to enforce rules.