

Tragedy of the Commons

BY CLAYTON BROGA

In *The Wealth of Nations*, Adam Smith argued that an individual acting in his self-interest will tend to benefit the common good. Guided by an “invisible hand,” competition that arises out of the natural desire to improve one’s lot in life will lead to efficient market outcomes. For example, a gardener tends to a businessman’s yard with care and at a reasonable price, not because he is particularly concerned with the businessman’s well-being but rather to make a living. The gardener receives the money, the businessman gets the service he desires, and both are better off. This transaction is merely part of the larger, interconnected network of mutually beneficial relationships that enhance a society’s well-being.

But there are situations in which the individual interest runs counter to the public interest. For instance, a decision may be rational on the individual level in the short run but counterproductive for everyone over the long run. This often occurs when there is large group consumption of exhaustible resources. Ecologist Garrett Hardin coined the conflict a “tragedy of the commons.” His classic example is that of herders adding cattle to graze on a common pasture. It is entirely rational for an individual herder to add cattle to the land and thereby increase his harvest. However, if all of the herders continue this process, they will overgraze the pasture, destroy it, and all will be worse off in the long run. A negative externality, or the unintended side effect of one person’s actions harming another, results from the individual herder’s behavior.

Policymakers have often tried to lessen the negative effects of such common-use problems by regulation — in particular, by setting limits on the available use of the common resource. But regulation is often very costly for both regulators and the regulated alike. Monitoring compliance can be difficult for government regulators, while complying with regulations can force firms to adopt expensive technologies and slow production. Moreover, it’s unclear how well regulations actually protect the intended resource. If the regulation is badly constructed, for example, a firm could deem a punitive measure for their defection cheaper than undertaking the necessary adjustments to meet regulations.

So instead many economists favor more market-based approaches. Tops on their list is permit trading. In his 1960 paper “The Problem of Social Cost,” economist Ronald Coase now of the University of Chicago argued that the

negative externality can be eliminated by allowing parties to bargain privately among themselves.

Consider how permit trading may work in the case of air pollution. First, the government establishes a limit on the total amount of pollution. It then issues permits equal to a specific number of units of pollution. Those permits are bought and sold among companies. Firms that find reducing pollution relatively expensive will purchase permits from firms that find cutting back less costly. In the end, the cap on total pollution limit is met, but firms have bargained toward this solution in a way that is more efficient than traditional regulation.

In a 2003 paper published in the *Oxford Review of Economic Policy*, Tom Tietenberg of Colby College reviews the effectiveness of permit trading in modern-day applications. He cites permit-trading programs in the United States that have reduced pollution at relatively low costs, arguing that some have actually produced positive externalities by

lowering the levels of other air pollutants not specifically targeted. In addition, permit trading has found its way into the international Kyoto Protocol and European Parliament pollution laws.

Tietenberg also tracks permit trading’s modern history in the fishing industry, which has yielded more mixed results. The unregulated fishing industry is similar to Hardin’s pasture-herder example: Fishermen tend to overharvest

the limited supply of fish, depleting the stock for the next season. As a result, select areas have instituted permit-trading programs. However, it’s been found that some fishermen have discarded loads of low-valued fish, resulting in their deaths, to make way for higher-valued fish. This allows fishermen to meet their quota, but it doesn’t necessarily enhance the health of the industry as a whole.

What’s more, even when permit-trading systems have yielded efficiency gains, there are still concerns about whether the results are just. Usually, these critiques center on the initial allocation of permit rights, which can have significant distributional consequences. Indeed, squabbles over who gets what are often a stumbling block to a permit-trading system even getting off the ground.

In any case, findings from both theory and practice have proven useful in understanding tragedy of the commons problems. While traditional regulations may prove useful in some circumstances, often it is more desirable to establish a framework in which private firms can largely resolve the problems themselves.

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