

GLOBAL COMMONS

ISSUES, CONCERNS
AND STRATEGIES

EDITED BY

MOHANAN BHASKARAN PILLAI
GEETHA GANAPATHY-DORÉ



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Chapter 1

From the Tragedy of the Commons to Sustainable Commons

A Survey of the Theoretical Developments on CPR

Bindu Balagopal and **P. Chacko Jose**

INTRODUCTION

The term 'common pool resources' (CPRs) connotes resources common and open to all on the planet earth and from which exclusion of individuals is not possible. Fisheries, backwoods, groundwater bowls, pastures, lakes, seas and earth's climate are general instances of CPRs. At the point when numerous people make use of CPRs, the net outcome is environmental degeneration of unimaginable magnitude. The expression 'tragedy of the commons' has encapsulated environmental degradation due to overuse of CPRs. Ecological issues, for example, a planet-wide temperature boost, water shortage, environmental degradation, contamination, land debasement and biodiversity misfortune are, to some degree, the consequences of overuse of CPRs.

Mainstream economics treats the environment as resource, and problems that emanate from overuse of CPRs are considered as market failures partly, if not entirely. Markets can function adequately

by establishing property rights and minimizing transaction costs. Environmental goods showcase failure when business sectors and administrations do not exist, and when business sectors do exist, the market costs do not pay much attention to their scarcity values. Through recognizable proof and estimation of these market failures, one can think of offering solutions to market failures. State intervention is a solution to reduce environmental degradations when the market fails.

Ecological debasement can regularly be the consequence of market failures. Proficient appropriation of assets is a condition to address market failures. Markets fail to work effectively in the arrangement of public good, within sight of externalities, and when property rights are not well characterized. For allocative productivity just as for productive working of the market, the cost of the item ought to be equivalent to the peripheral expense of creation. In any case, the externalities of the production process are not borne by sellers and buyers. There could be a positive externality, just as there could be a negative externality to any exchange relationship. In the issues of environmental pollution, we can notice the nearness of a negative externality. A negative externality emerges when the pollution brought about while producing a commodity is not borne by the producer alone but by the transacting parties, that is, the seller and the buyer as also the general public. Many negative externalities surface as the environmental consequences of production and use (Balagopal and Jose P. 2015–2016).

At the point when it is excessive to even think about excluding individuals from access to a natural asset for which there is competition, market allocation is likely to be wasteful. Hardin's (1968) concept of the 'tragedy of the commons' highlighted the difficulties associated with practicing non-exclusion in the access to CPRs. Later, Ronald Coase recommended some approaches to overcome the issue of negative externality emerging from the absence of property rights. He contended that in order to achieve allocative efficiency, one had to deal with the parties concerned, if exchange costs were negligible. Be that as it may, here once more, the issues connected with the allocation of resources are addressed, instead of addressing the fundamental issue of environmental degradation (Felice and Vairo 2012). Before the publication

of Ostrom's studies, the solution to the tragedy of commons revolved around the idea of privatizing resources or establishing property rights. Instead, Ostrom demonstrated that a community-based bottom-up approach with appropriate government involvement could lead to a sustainable and shared management of resources, which could, at the same time, be productive from the financial point of view.

In the light of the above discussion, this chapter makes an overview of three seminal works, namely, Garret Hardin's (1968) work on 'The Tragedy of the Commons', Ronald Coase's (1960) *The Problem of Social Cost*, which examines the question of property rights, and Elinor Ostrom's (1990) work on 'Governing the Commons'.

THE TRAGEDY OF THE COMMONS

In 1833, William Forster Lloyd published a short pamphlet explaining the ideas that served as the bricks and mortar of the conceptualization known as 'the tragedy of the commons'. The pamphlet and its content remained under obscurity until 1968, when Garret Hardin wrote an article in the journal *Science*. Thus, Hardin brought Lloyd's ideas into the limelight. For the purposes of this chapter, we use the term 'commons' to refer to any common assets that do not fall within the ambit of individual or corporate interests.

Indeed, these sources are available for use by the public. These might include public pasture land, lumber, oil, the seas, the air, natural life and fish and numerous other shared resources, such as land for eating, angling zones, backwoods for timber, water for the farmland and increasingly impalpable assets, like information, for which 'client' utilization is hard to control and delimit. The issue with these sorts of assets, as identified in the publication of Garret Hardin (1968), is overexploitation. The sustainability of these resources is not a concern of the users. Individuals behave opportunistically (like free-riders), pocket the benefit and collectivize the costs.

The tragedy of the commons depicts how individuals regularly exploit assets that are freely accessible to them. They do not consider that if everyone overuses a comparable asset, it will provoke adverse

effects for everyone, including themselves. In this exceptional situation, sharing requires that no individual has a case to any piece of the asset, but instead every individual can utilize a bit of it for his/her ideal position. The debacle is that, without a rule, each individual will, in general, misuse the assets: promoting his/her latent capacity advantage, usually unbounded. In this circumstance, the assets get depleted and, in the end, demolished. The fundamental reasoning is that, if the commons, at last, will be spent, whoever impacts the most raised use stands to benefit the most. Under this condition, we are of the view that the favourable position/cost extent is cosmic. While the advantages accrue solely to the customer, the costs get spread among all others sharing the commons (Ponce 2010).

The well-known example given by Hardin (1968) includes pastureland that people use to graze their cattle. Hardin argued that when multiple users had access to the same valuable resource, the result would be a 'tragedy of the commons' to which no technological solution could be found. With the illustration of grazing land, Hardin argued,

Each herder would keep adding cattle to his stock as long as it remained privately profitable, neglecting the costs of this activity on others sharing the commons. The consequences would be depletion and eventual destruction of the pasture. Only through the division of the land into private lots, or regulation by the state could the tragedy be averted. (Cardenas and Sethi 2016, 7)

Further, the herdsmen who indulged in excessive use of grazing land or added more and more cattle to their herd motivated other herdsmen or anybody for that matter, in the long run, to copy what they were doing. The more the herdsmen were self-centred and profit-oriented, the more the pastureland was ruined, and as a result, the herds subjected to an immeasurable amount of suffering. As Hardin rightly pointed out, 'Freedom in a commons brings ruin to all' (Hardin 1968, 1244).

Hardin authored the adage 'tragedy of the commons' to depict this complicated situation and gave social sciences one of the most compelling moral stories after Adam Smith's 'invisible hand'. Both these analogies are convincing because they depict two different social conditions.

Precisely, when social interchanges get guided by an undetectable hand, they lead to a particular choice and socially desirable results. In the terribleness of an asset, regardless of what may be healthy, individuals looking after their individual goals cause tragic implications for themselves as well as for others (Felice and Vatterio 2012).

THE COASE THEOREM

The Coase theorem, developed by the economist Ronald Coase, puts forward the idea that when clashing property rights occur, haggling between the gatherings involved will prompt a valid result, with little attention paid to which party gets ultimately granted the property rights provided that the transaction costs related to the bargaining process are negligible. In particular, the Coase theorem posits, 'If trade in an externality is possible and there are no transaction costs, bargaining will lead to an efficient outcome regardless of the initial allocation of property rights' (Haiduk 2015, 250). The Coase theorem further points out that in the matter of resource allocation, the property rights did not matter much in such situations where it was clearly defined, and the costs of making transactions were negligible. 'The Coase theorem is a method of tackling the inefficiency caused by an externality, by awarding property rights to the externality to one party and allowing the parties concerned to bargain their way to an efficient solution' (Beggs 2019, 4).

However, there are at least two reasons why society cannot always depend upon the Coase theorem to solve the problem of abuse of CPRs. First, the cost of bargaining among millions of people who are affected may turn out to be stupendous, as in the case of air pollution. It is hard to envision a massive number of individuals getting together for arrangements at sufficient ease. Second, the hypothesis takes it for granted that benefit owners can recognize the source of harm to their property and legitimately prevent harms from occurring by making the right move. For instance, on account of air pollution, regardless of whether or not property rights to air contamination got established, it is not clear how property owners would be able to identify the polluters responsible for dirtying their environment and the proportion of

harm for which each one was liable. Thought in these lines, the Coase theorem is the most relevant one for cases in which there are more than two parties involved, and the places of origin of the externalities appropriately defined.

SUSTAINABLE COMMONS

The approach of Ostrom to similar situations was very much different from that of Coase. She was of the view that the external imposition of usage rights was not feasible and desirable in many environments. As noted by Cardenas, however, 'Individuals with access to shared resources could reach tolerably efficient allocations through social norms backed by the implicit threat of decentralised sanctions. They could develop formal rules or rely on informal ones, thus engaging in what she called self-governance' (Cardenas and Sethi 2016).

Elinor Ostrom founded her study on the notion of CPR and brought out a clear differentiation between open access and common property resources. An initial phase in building her explanatory system was to make a clear-cut differentiation between assets held as common property and those subject to open access. Common property includes a well-characterized network of clients and a related arrangement of rules and norms that allow them to control each other's conduct. Those in the network demonstrate commitment—either independently or in concert—to keep outsiders from misusing the resource, regardless of whether the customary laws of the more significant political elements inside, which they get inserted explicitly, restrict such prohibitions. Models incorporate numerous inshore fisheries, touching terrains and woodland zones. Open access, paradoxically, alludes to assets from which avoidance is troublesome or inconceivable without formal state activity. Sea fisheries and the worldwide air as a carbon sink are clear examples. She concurred with Hardin that open access to resources belonging to no one is vulnerable (Ostrom 1990) yet differed when it came to scarce resources. Ostrom and others gave various instances of regular use, some of which had existed for a considerable length of time and had sustained the resources in question. The highlight is that both Hardin and Ostrom differentiated and bundled of property rights and their holders, namely,

(1) authorized entrants (2) authorized users whose rights are limited to access and withdrawal of resources; (3) claimants who hold the collective right of management; (4) proprietors, who can exclude others and (5) owners, who have the right of alienation, i.e. to sell the resource. The stability of the existence of the shared pool resources, they postulated, depended on the strength of the bundle of rights. (Schlager and Ostrom 1992, 249–262)

Based on her extensive research work, Ostrom offered following standard principles to govern commons reasonably and fairly in a community:

1. Define clear group boundaries.
2. Match rules governing the use of common goods to local needs and conditions.
3. Ensure that those affected by the rules can participate in modifying the rules.
4. Make sure outside authorities respect the rule-making rights of community members.
5. Develop a system carried out by community members for monitoring members' behaviour.
6. Use graduated sanctions for rule violators.
7. Provide accessible, low-cost means for dispute resolution.
8. Build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system. (Walljasper 2011, 5)

In each one of the above principles, institutional subtleties are fundamental. Beginning from the hypothetical commitments of Ronald Coase, Douglas North and Oliver Williamson, Ostrom isolated the primary attributes of local self-government. The first condition for the institutional premise of the achievement of these instruments is the clarity of the law. Whether or not they are transparent, the standards practised must get shared by the community. That is the reason why another essential component of self-government is the foundation of

the techniques for aggregate and vote-based leadership, equipped for including all clients of the asset.

Furthermore, the instruments of conflict resolution must be local, public and open in order to be available to all members of the community. Other than systems of graduated sanctions, joint control of the resources among the clients themselves must be implemented. Such control has a twofold legitimacy. To start with, those fascinated by the proper management of the resources would have a motivation to monitor the administration, and second, as clients, they have access to information on how the resources can be utilized inappropriately by the others. Finally, the rules and regulations of governance, irrespective of whether they are clear, mutual and made fruitful by all members in the local community, must not conflict with the governance norms of the government at the higher level.

CONCLUSION

Most of the issues related to sustainability are due to the mismanagement of CPRs. The discipline of economics and its theory have eminently contributed to the understanding and management of CPRs. Hardin made the first-ever attempt in this regard through the conceptualization of 'tragedy of the commons'. His theory underscored the challenges involved in implementing non-exclusion concerning the use of scarce CPRs. Ronald Coase suggested that allocative efficiency was achievable by bargaining among concerned parties if transaction costs were small. Elinor Ostrom emphasized that instead of privatization, the collaboration between local people and public officials could achieve sustainability of CPRs. These theories have given rise to the emergence of new principles in international environmental law.

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