

*Avoiding tragedies: a Flemish common and its commoners under the pressure of social and economic change during the eighteenth century*¹

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Despite the wide application of the metaphor of ‘the tragedy of the commons’, there is little historical literature that points to the weaknesses of its historical basis. There is, however, sufficient qualitative and quantitative evidence to prove that commons were well regulated and organized in order to achieve a sustainable management, that also took into account the needs and wishes of its commoners. This case study of a common in Flanders looks at the evidence for this in the eighteenth century, examining bookkeeping and other archival sources. A model that incorporates the different functions of the commons (sustainability, efficiency, and utility) is explained and applied.

In 1968, in his article ‘The tragedy of the commons’, Hardin described how a medieval common pasture was over-exploited due to the selfish behaviour of the villagers.² In his account, all inhabitants of the medieval European village could use the common pasture. There seemed to be no clear restrictions on access to the common, nor on the number of livestock each of the users could put on the common, nor was there a collective management (in terms of use and maintenance) of the land. Moreover, the commoners seemed not to communicate with each other about the use or management of their common.³ This ‘freedom on the commons’ gave the commoner the incentive to put as many cattle on the common as he possibly could; after all, surely every rational herdsman would conclude that selfish behaviour was the most advantageous strategy for survival. As long as diseases and adversity decimated the cattle and the herdsmen from time to time, no real problems arose on the common. However, due to population growth, this freedom of use would eventually lead to the over-exploitation and degradation of the common; hence, ‘the tragedy of the commons’. Internet searches and citation indexes confirm that it would be difficult to find a stronger or more widely used metaphor. Because Hardin made clear links among population issues, property rights, and environmental degradation, his ideas found an eager audience among

¹ The author would like to thank Jan Luiten van Zanden, Bas van Bavel, John R. McNeill, and three anonymous referees for their useful comments on earlier versions of this article.

² Hardin, ‘Tragedy of the commons’.

³ The term ‘commoners’ in this article always refers to those people who were entitled to use the common. Likewise, the term ‘commons’ never refers to the House of Commons in this article, but to resources (in particular land) that are used and managed in common. For a discussion of these definitions, see De Moor, Shaw-Taylor, and Warde, ‘Comparing the historical commons’, pp. 18–19. See also the glossary in De Moor, Shaw-Taylor, and Warde, eds., *Management of common land*, p. 261.

those concerned with environmental problems—from scientists of many different disciplines to politicians—especially in the aftermath of the Club of Rome’s report in 1972. Since the 1980s, however, sociologists such as Ostrom have shown, on the basis of extensive fieldwork all around the globe, that common property regimes can function properly and that commoners are capable of organizing the use of their natural resources in a sustainable way.⁴ However, most of those studies which support this claim have focused on contemporary commons. Strangely enough, the metaphor itself and thus also the supposition that commoners in bygone days were bound to fall victim to the temptations of self-interest, and self-interest only, has hardly received attention from historians. Despite the weaknesses of the historical underpinnings used by Hardin to illustrate his convictions, these have not been put to the test of empirical research by historians.

Nevertheless, there is sufficient qualitative and quantitative historical material to suggest that Hardin’s picture of the pre-industrial villager is in need of substantial adjustment. First of all, there is abundant evidence that most commons were well regulated and strictly organized institutions. Contrary to Hardin’s belief, there was no ‘freedom’ on the common: the use of the common’s resources was restricted by a large body of ‘do’s and don’ts’ whose infringement would lead to severe punishment. Secondly, this article’s analysis of a variety of sources from a common in Flanders reveals that, with this body of rules and well-thought-out instruments, commoners were able to achieve and maintain an environmentally sound and stable exploitation level of their common. The reconstruction of their day-to-day management also reveals that achieving ecological sustainability was not the only objective of the commoners’ community. As social change and changes in the composition of the group of commoners could greatly influence the use of the common, it was for them of great importance to guard the utility of the resources obtained from the common and strive for an equitable management. The participation—in varying forms and intensities—of commoners hereby played an influential role.

In addition to offering historical evidence to counter Hardin’s metaphor, this article also aims to unite theoretical insights from different disciplines that have been dealing with the ‘tragedy of the commons’. The lack of historians’ interest in this metaphor is a consequence of the different paths they and other social scientists working in this field of study have followed. Much of the historical research on commons has focused on the effects of the dissolution (enclosures) on the commoners, instead of on the effects of the users upon their common.⁵ Moreover, historians have studied commoners mostly as groups, and not as individuals who may have divergent strategies towards the use of a common. Conversely, researchers from the non-historical social sciences primarily have researched the effects of the commoners’ individual behaviour on the functioning of the common, starting with the premise that commoners may follow a free-rider’s strategy instead of a cooperative one, thus influencing the common and the other commoners’ benefits. Along these lines, theories for the optimization of

⁴ See, for example, the influential work by Ostrom, especially *Governing the commons*.

⁵ British historiography in particular has focused primarily on the enclosure movement. Many references to works on enclosures could be made here. See, for example, Neeson, *Commoners*. For the impact of the enclosures upon women, see Humphries, ‘Enclosures, common rights, and women’.

management and use of common pool resources—resources characterized by low excludability, high subtractability, and low divisibility (see section II)—were developed. By contrast, the regulation of the commons is a theme that was only recently tackled by historians.⁶ In short, historians and other social scientists clearly have been following different paths; more synergy can offer new insights into the functioning of commons that the work so far, which is mainly descriptive, has not yet offered. Moreover, it can add historical depth to the theorizing of social scientists working on similar issues.

This article begins by explaining the three most important functions of commons as part of a model that should allow a more integrated study of the functioning of a historical common. Interdisciplinary research has shown that a common is more than just a stock of natural resources. In order to achieve sustainable management, a sound institutional framework that stimulates the cooperative behaviour of the commoners is necessary. In this article, the economic, social, and institutional aspects of commons are integrated into one analytical model. The application of this model to a specific case study in Flanders shows that the pre-industrial commoner was not necessarily the *homo economicus* in search for the commercialization of the goods that could be found on the common. Moreover, it shows that the commoners adjusted their management to endogenous and exogenous processes of change. The institutional framework of the commons was sufficiently flexible and adaptable to achieve a sustainable resource management, thus preventing a ‘tragedy of the commons’. Nevertheless, the choices made by commoners were often far-reaching for themselves as individuals, for the commoners as a group, and for the common land as a natural resource. As will become clear, the case study offers sufficient evidence to prove that commons were not the backward and immobile institutions as claimed by some eighteenth-century contemporaries and historians alike.

I

Over the past few decades, a multitude of definitions to describe aspects of the commons have been invented. A clear view of how commons function can, however, be obtained by first of all distinguishing the three most important aspects of commons: the natural resources, the users, and the institution (see also figure 2). In the literature, the term ‘common’ refers to a natural resource, varying from land (common land) to watercourses, fishing ground, and other eco-types.⁷ This corresponds with what generally falls under the denominator of Common Pool Resources (CPRs). Research has also made clear that there is more to a common than just the land or the fishery: a common is a resource system that comprises several different resources types (for example, peat, wood, berries, or fish) which all have their own dynamics of regeneration.⁸

CPRs have three characteristics that create what is referred to as a ‘commons dilemma’, which is a particular type of social dilemma. A ‘commons dilemma’ or a ‘replenishable resource dilemma’ is a situation in which individuals need to choose

⁶ See De Moor, Shaw-Taylor, and Warde, eds., *Management of common land*; Shaw-Taylor, ‘Parliamentary enclosure’; idem, ‘Labourers, cows, common rights and parliamentary enclosure’.

⁷ In recent literature, ‘a common’ is now also used with reference to things other than natural resources, such as information. See, for example, Hess and Ostrom, eds., *Understanding knowledge*.

⁸ Ostrom, *Governing the commons*, pp. 30–1.

between the long-term benefits for the group (cooperation) or for the immediate advantages for themselves (non-cooperative behaviour) of the use of a natural resource.⁹ This dilemma is the trigger for users of a good to choose whether or not to develop a common property regime. An essential characteristic of social dilemmas is that they are dynamic in nature: they arise under certain conditions and they change over time in reaction to changing conditions, as will become clear with the case study. This social dilemma stems from the combination of low excludability, high subtractability, and low divisibility which characterizes common pool resources. Excludability refers to the degree to which non-members can be excluded from using the resource. It is difficult to keep non-members from using CPRs, which are often vast stretches of land. Subtractability refers to the degree to which the use of one resource unit influences the total amount of resources that remain available after subtraction. The higher the subtractability, the more difficult it is to replace the resource that has been consumed. Resources that require a long period of time to regenerate—petroleum being an extreme example—are highly extractable. Divisibility refers to the degree to which it is feasible to subdivide the resources into separate units; for example, into separate plots of land. In order to solve the social dilemma that stems from these three characteristics, the ‘owners’ of the CPR can choose between turning the land into private or public property. The first option would, however, most likely turn out to be too costly, while the second would eventually lead to the over-exploitation of the land.

In such cases, a common property regime (CPrR) can offer the solution. A CPrR is a property regime somewhere between private property and public property. For long-term retrospective studies, the term ‘property’ causes problems: it is difficult to apply it to pre-industrial times, when the feudal structures of society mostly resulted in a complex collection of different claims by different individuals and groups on the same resources (the land itself, and also the resources that could be found underneath the land, such as peat, and on the land). A CPrR should—at least when discussing pre-nineteenth century developments—be considered as a bundle of rights to land (and other resources) rather than the more absolute interpretation of property that is used today. Contrary to what Hardin and his followers have claimed, commons in pre-industrial times were clearly different from open-access goods, also called *res nullius* (‘nobody’s property’), which refers to a territory whereupon no property rights have been recognized.¹⁰ In the case of open access, there are no rules that regulate the individual use rights. As will become clear in this article, the historical commons were in the first place established to set limits to access—physical and legal—to their resources. Hereby, the methods used for achieving exclusion could be quite sophisticated.¹¹

Throughout Europe, commoners tried to restrict the use of the resources on the common by means of limiting the influence of the two most important causes of

⁹ See Messick and Brewer, ‘Solving social dilemmas’. See also the comprehensive chapter on the commons dilemma in Jager, *Modelling consumer behaviour*, pp. 9–20.

¹⁰ Ford Runge, ‘Common property and collective action’, p. 18; Ciriacy-Wantrup and Bishop, ‘“Common property” as a concept’, pp. 713–27.

¹¹ Although this article does not deal with non-European commons, there is ample evidence of those commons using the same sort of regulation for access to and use of their CPRs. For examples, see Campbell and Godoy, ‘Commonfield agriculture’; McKean, ‘Management of traditional common lands’; Wade, ‘Common property resource management’.

over-exploitation: population growth and commercialization of the resources. As this article will make clear, commoners were aware of the distinctive nature of these two threats: rules concerning population pressure were formulated differently from those preventing commercialization. In most cases, access rules were set in accordance with the local sovereign, often entailing specific exceptions such as the preservation of the sovereign's own hunting rights. Several different types of 'access rules' can be discerned.¹² Firstly, access could be linked to property-holding, or tenancy of a particular property within a lordship, which might be a building, common arable, or both.¹³ A second method to restrict access was limiting the rights to the members of the village commune or municipality. The common rights were owned by the collectivity of the 'citizens' or members of the commune, who exercised these rights as a group rather than as an association of individuals. They had rights to common resources within the jurisdictional area of the village. The common land (usually the common waste) was often actually owned by the administrative institution of the village, although such bodies were still mostly juridically subject to a lordship and, later, the state. The village court made by-laws, frequently found in some form in Germany, parts of (Dutch and Flemish) Brabant, Alsace, and Béarn.¹⁴ These commons were transformed into the public property of the local municipality as a result of the French Revolution. A third method consisted of limiting use rights to members of a cooperative or an association of individuals (for example, in the case of the *markegenootschappen*; see below). An individual member could be anyone from a peasant farmer to a noble, a village commune, a corporation, or a monastery. They could claim rights over a set area of land and usually had their own regulatory institutions. Historical examples of such autonomously functioning institutions can be found all over Europe; for example, in the Netherlands (*markegenootschappen*) or Germany (*Genossenschaften*).¹⁵ In addition to these corporate organizations, common land could also be managed by the village community. This was the case in, for instance, the *meenten*—as the commons in the provinces of Brabant (in Flanders and in the northern Netherlands) were called—where the local village (or municipality) was responsible for their administration.¹⁶ In those cases, all residents in a particular area, or in fact any subjects of the local ruler, had rights. This was usually only the case with very large commons, such as in northern Sweden, which had a relatively low risk of being depleted, considering the contemporary level of population.¹⁷ In Flanders, it was occasionally the case that anyone who resided within an area around the common (the so-called *vrijdom*) could claim common rights.¹⁸ They had either their own local regulatory institutions, which were autonomous, or, for

¹² Warde, 'Gestion des terres', pp. 67–8; De Moor, 'Common land and common rights', pp. 129–31.

¹³ Examples could be found in, for example, north-western France; see Vivier, 'Management and use', p. 157.

¹⁴ Warde, 'Gestion des terres', p. 70.

¹⁵ For the Netherlands, see Van Zanden, 'Paradox of the Marks'; for Germany, see Warde, 'Common rights and common lands'.

¹⁶ Hoppenbrouwers, 'Use and management of commons', pp. 101–3.

¹⁷ See, for example, Sundberg, 'Nordic common lands', pp. 173–81.

¹⁸ For example, this was the case at the Beverhoutsveld, a common in the close vicinity of the Gemene and Loweiden. The Beverhoutsveld was situated in the village of Oedelem, but the common also bordered on two other villages (Beernem and Oostkamp). In order to restrict access to the common, only those villagers who lived in a well-defined area around the common which was called the *vrijdom*, regardless of whether they were inhabitants of Oedelem, Beernem, or Oostkamp, could claim rights. See Errera, *Masuiers*, pt. II, p. 245 and Van Speybrouck, 'Beverhoutsveld', p. 163.

the use of some resources (such as game), they came under the auspices of the central administration, as in the case of state foresters.¹⁹

Overall, the regulation of access to commons became more exclusive and restrictive, in particular from the end of the sixteenth century onwards (following a population rise): commoners increasingly added supplementary conditions to access to the common.²⁰ In both England and parts of Germany, the readiness of users to make this distinction comes to light more clearly in the second half of the sixteenth century, in particular where tenancies tended to be subject to impartible inheritance, as in the northern German *Genossenschaften*. Elsewhere—in places where, previously, use rights had been accorded to all residents—a related form of restriction was found. A dividing line was drawn, after which only descendants of those who enjoyed rights before the cut-off point could enjoy rights in the future, a phenomenon that could be found in Austrian Flanders, for example (see the case study).²¹ Secondly, exclusion was enhanced by the municipalities themselves. Authorities limited in-migration by setting up barriers to entry, such as payments and property requirements.²² They could limit marriage opportunities, refusing permission to marry to those who might become dependent on poor relief in the future. People could also have their rights graded according to the size of their holding, feudal or communal services owed, or depending on the form of their residence (partitioned or not, for example). These patterns were replicated across many communes in the Netherlands and southern and central Germany.²³

Compared to the nineteenth century, the pre-industrial way of dealing with property rights was more flexible: on the basis of a local agreement between the involved parties (lord(s), commoners, representative(s) of the local administration, etc.), the rights to the common resources were arranged; the management could be adjusted to changes in the environment or needs (of any one party). Contrary to what one might expect, commoners did not always taste defeat in negotiations with local lords. Depending on the circumstances—which, before the eighteenth century, were often advantageous for the commoners—they sometimes managed to claim new rights or adjustments of the regulation to their advantage.²⁴ Also because of the explicit management prescriptions that went with the use rights and the possibility of ad hoc changes, the rather flexible system of property rights of the *ancien régime* offered, in most cases, more opportunities for sustainable and equitable management of the commons than the new rigid juridical organization that was introduced in most western European countries at the beginning of the nineteenth century. The introduction of civil law created an entirely new view of the organization of property holding. The introduction of the ‘Code Civil’ in 1804 in Belgium, for example, allowed only a temporary form of legal recognition to a

¹⁹ De Moor, ‘Common land and common rights’, pp. 129–30.

²⁰ See Warde, ‘Gestion des terres’, pp. 69–70.

²¹ De Moor, ‘Common land and common rights’, p. 130.

²² For example, on the Maleveld (a common east of Bruges, in the vicinity of the area studied in this article), the ownership of a horse led to exclusion from the common (on the basis of the 1717 regulation of the Maleveld; Errera, *Masüirs*, pt. II, pp. 307–11).

²³ See the *waardelen*-system (use-shares) of the *markegenootschappen* in different parts of the Northern Netherlands (see Hoppenbrouwers, ‘Use and management of commons’, pp. 98–106), and the distribution of common rights on the basis of *corvée* in southern Germany (see Warde, ‘Gestion des terres’, pp. 203–4). See also Van Zanden, ‘Paradox of the Marks’, pp. 128–30.

²⁴ De Moor, Shaw-Taylor, and Warde, ‘Preliminary conclusions’, pp. 255–6.

group of persons who had land in common but—as a group—did not form a legally recognized administrative unit (that is, a municipality). Under the Code Civil, only property that was common to all inhabitants of a municipality (and thus was property of that municipality) could be kept in common.²⁵ In comparison to the *ancien régime*, the legal security of the ‘closed type’ of common property (commons that were managed and used by an association; see below) was seriously curtailed and the commoners’ autonomy in managing their natural resources—with only minor interference from local administrative bodies—was affected. Those ‘closed types’ of commons transformed into associations that continued to manage their land collectively, though, from then onwards, often in conflict rather than in cooperation with the local government, as will also be shown on the basis of the case study.

In these circumstances, national privatization laws had comparatively more success in dissolving the commons than the legislation of the eighteenth century Austrian and French régimes.²⁶ By the middle of the nineteenth century, most European commons had disappeared due to compulsory selling, ordered by regional and national governments.²⁷ In addition to the changed juridical circumstances, however, it should not be forgotten that changes in agriculture and society at large had also contributed to a weakening of the common property systems by the middle of the nineteenth century.

However, this article does not focus on the dissolution of the commons, but precisely on the capability of commoners to manage their common property in a sustainable way. In order to understand the commoners’ choice for such a management, it is necessary to look at the origins of the commons. The origination of the European commons can be explained as an answer to certain commons dilemmas that arose during the middle ages, and in particular during the period from the eleventh until the thirteenth century, when large-scale reclamations threatened to destabilize the balance between arable land and pasture land.²⁸ At that point, villagers were facing a challenging problem. On the one hand, the large wastes were becoming too scarce and important for their agricultural system for everyone to be allowed access to that land. Some kind of property arrangement was absolutely necessary. On the other hand, the costs of a private property arrangement for that land would have been too high for managing resource systems with low potential productivity, due to the relatively low (market) value of its resources and to the high natural risks to which many of these pastures were exposed (such as inundations). The grass, wood, and peat that could be found on the wastes was important for the villagers to keep their households and farms going, particularly in times of hardship. But the value of those resources was not high enough and the production of it too unreliable to provide the commoners with a steady income. In these cases, common property offered the ideal solution:

²⁵ The original 1804 reference to this in the Civil Code can still be found in the present-day version. See article 542 of the Belgian Civil Code: ‘*les biens communaux sont ceux à la propriété ou au produit desquels les habitants d’une ou plusieurs communes ont un droit acquis*’ (*Code civil belge*, p. 127).

²⁶ In Belgium, the most effective of the national legislation laws was the ‘reclamation law’ of 1847. For an overview of the eighteenth- and nineteenth-century legislation on the dissolution of commons, see De Moor, ‘*Terres communes en Belgique*’, pp. 132–55.

²⁷ For an overview, see Vivier and Demélas, *Propriétés collectives*. For a description of the dissolution of the commons in Belgium during that period, see the chapter on Belgium in that volume (pp. 119–37).

²⁸ See Verhulst, ‘*Occupatiegeschiedenis en landbouweconomie*’, pp. 83–93.

this property arrangement offered advantages of scale, lower transaction costs, and the possibility to share and avoid risks.²⁹ On the other hand, sharing land and resources also brought along other—primarily social—problems, of which the solution might have influenced the reciprocity among the users: how can the common be managed in such a way that all members will feel equally and sufficiently benefited so that they abstain from free-riding? How can one achieve a division of resources that does not cause overuse and conflicts, in the short term and the long run? The users of common land anticipated the possible disadvantages of their common property arrangement by setting up a Common Pool Institution (CPI), what is referred to here as the third dimension of a common.

A CPI is an organization that provides the rules and mechanisms for managing resources in common to the commoners. Whereas Hardin pictured the commons as patches of land used by a bunch of anarchic and asocial villagers, the historical sources show that almost everywhere in the north-western part of Europe, well-regulated organizations were set up to manage common land. For the most part, the users were jurors in manorial or village courts, and monitors of the day-to-day use of the commons. As such, they usually also enjoyed the power to alter management rules. These institutions often, though not always, appear to have had a system of graduated fines for punishing wrongdoers, and they drew up by-laws that were approved or amended by the lord, local courts, or the body of users, depending on the gravity of the charge. Small day-to-day or urgent changes were decided upon by the managers; changes that affected the users, such as a change in the price for placing cattle on the common, needed the approval of the general assembly of users. The lord usually interfered only when major changes that required the editing of the charter were requested by the commoners or himself. The commoners did realize that limiting access was not enough to ensure sustainable management.³⁰ The common could also be threatened by free-riding by its own commoners. Free-riding happens when someone uses the common in a wrong or excessive way, considering only his own short-term advantages and not the general well-being of the local community of users. For example, this is the case when a commoner disobeys the rules by putting livestock that is explicitly forbidden on the common, with possibly qualitative consequences (that is, destruction of the fence or pasture land) or when he takes more resource units than he is entitled to. One can assume that this quantitative violation tends to become more frequent in the case of population growth, but the primary cause is a shift in the behaviour of the commoners, and not necessarily their number. McKean noted this change in behaviour under the pressure of economic development and commercialization in Japanese agriculture and countryside. At the same time, however, other commons had developed techniques to prevent a tragedy of the commons.³¹ Similar techniques were developed in Europe. Until the end of the *ancien régime* and in some European economies even until the end of the nineteenth century, commons formed an inextricable part of subsistence agriculture. They provided the fodder that was necessary to feed the livestock that in turn

²⁹ On risk avoidance in open fields, see also McCloskey, 'Prudent peasant', pp. 343–55.

³⁰ A large number of examples concerning the regulation of the commons can be found in De Moor et al., eds., *Management of common land*.

³¹ McKean, 'Management of traditional common lands', p. 64.

provided the valuable manure for the poor and exhausted arable land. Most commoners aimed at providing themselves and their families with a sufficiently high living standard. Their participation in the markets was limited. In order to prevent the effects of the more commercially oriented behaviour of some of the commoners and thus of economic change, rules to preserve the commons for the subsistence economy can be found in many commons regulations.

Depending on the type of natural resource involved, three different types of rules with that objective can be found in the context of the European historical commons. In general, the amount of produce one was allowed to take was limited to a certain number of resource units. In some cases, the surface of the common was expressed in terms of the number of livestock units the common could feed over the course of a year. In, for example, the Wijkerzand common in the central Netherlands, the number of 180 'shares' and their size in the grazing rights of the common appear to have been laid down in the fifteenth century and have survived until today.³² Often, the shares of the commoners were not limited to the capacities of the common, but to factors that were directly related to aspects of the subsistence economy, which was for the majority of the commoners most important.³³ In Flanders, several types of 'anti-commercialization rules' can be found. One type of rule stated that the number of livestock allowed on the common had to be in proportion to the surface of the land used or owned by the commoner. Rules of this kind were meant to ensure that the livestock would have sufficient fodder during the period when the common was closed. This preoccupation also manifested itself in different types of rules: firstly, only livestock in the stables of the commoners that had spent the winter, or would spend the winter after the grazing period, on the common was allowed, while it was explicitly forbidden to buy livestock only for the period the common was open to grazing;³⁴ secondly, livestock from households other than those of the commoners was forbidden;³⁵ and thirdly, the maximal number of livestock allowed on the common depended on the surface of the commoners' arable land.³⁶ A second set of rules linked the resources taken from the common directly to the product market, by forbidding the sale of direct (for example, wood and berries) or indirect (for example, milk from a cow that had spent some time on the commons) produce from the commons. In some cases, the sale of those products was allowed within a certain perimeter (such as within the village). A third type of rule simply limited the use of particular resources (such as wood) to the needs of the entitled household. Such rules would have to be complemented by a strict regulation of the number of households that could make use of the common.

This overview of the functioning of a common shows that a common comprises more than just the sum of its resources, and that commoners are more than just

³² Hoppenbrouwers, 'Use and management of commons', pp. 109–10.

³³ Van Zanden, 'Paradox of the Marks', p. 131.

³⁴ This rule could be found on, for example, the Beverhoutsveld (see above, n. 18). See Errera, *Masuiers*, pt. II, p. 156. For the common in Arendonk (in the Campine area), it was explicitly forbidden to buy cattle only for the period the common was open as pastureland. See Lindemans, *Geschiedenis van de landbouw*, p. 329, n. 20.

³⁵ In the case of the Beverhoutsveld, it was mentioned explicitly that commoners could not allow any animals of non-entitled users to graze. See Errera, *Masuiers*, pt. II, p. 156.

³⁶ For example, in Geel, anyone who wanted to keep a cow on the common had to be able to provide for its feeding. The number of cows that a commoner could put on the common during the summer was restricted to the number he could feed in the winter, with the crops from the land he had in his possession. Moeskop, 'Het gebruik van gemene gronden', p. 63.

users. The three-dimensional approach to commons implies that a common is at the same time a common pool resource, a common property regime, and a common pool institution, and—most importantly—that these different functions interact. Changes in one of these aspects influences the other aspects, thus creating a dynamic system that evolves over time. In addition to the advantage of terminological clarity, the recognition of these three dimensions enables us to approach the functioning of common land in a coherent and systematic way. Most importantly, these terms allow the discussion of long-term evolutions—going back to the origins of commons in the middle ages—because they are sufficiently comprehensive to be used for all types of different commons, over a long period of time. As the social-ecological systems approach to commons suggests, the interaction between continuously changing factors, of both human and natural origin, should play a central role in our understanding of the commons.³⁷ A recent article by Turner et al. on the functioning of open-field farming—the arable version of the type of commons that is discussed here—confirms the results of this study, albeit for open-field farming: open-field farming was ‘ecologically balanced, the economic benefits maintained the rural community, and it provided a degree of equitable access to resources. At the same time it was susceptible to adjustment, allowing communities to alter the balance between arable and pasture to reflect the wider economic world.’³⁸ However, this article also goes a step further by explaining how influential the commoners and the changes in their backgrounds were in these processes of change.

II

Earlier descriptions of historical commons have often given a very static picture of their organization. Although the spatial variation of commons is generally recognized, their temporal variation is often underestimated. However, commons—in all their aspects—could change substantially. Sources on the regulation of the commons’ use shows that the managers of the commons were willing and able to adjust their management to the changes in the local social, economic, legal, and political conditions. In practice, managing common land was a matter of balancing the sustainability of its use to preserve the resources, the utility of the use for the commoners, and the equity of the management. Only a flexible management with regular meetings and a regular exchange of information among users and managers could deal with such a difficult task. In order to understand how a common pool institution really functioned in past times, it is therefore absolutely necessary to look beyond the written regulation, as it cannot sufficiently reflect the day-to-day functioning of a CPI; nor can it give an accurate presentation of the individual choices made by commoners, nor of the underlying stimuli to change the existing regulation. Researching the commons’ functioning from the perspective of the commoner is rare in historical research, mainly due to the lack of adequate sources. However, in some cases, sufficient data on their daily functioning have been

³⁷ In the literature on CPRs, the term ‘social-ecological system’ (SES) has been introduced as a result of the ecosystem approach in the study of social systems. Anderies, Janssen, and Ostrom, ‘Framework’, define a SES as ‘the subset of social systems in which some of the interdependent relationships among humans are mediated through interactions with biophysical and non-human biological units’.

³⁸ Turner, Beckett, and Afton, ‘Agricultural sustainability’, pp. 137–8.

preserved. The Gemene and Loweiden—near Bruges, in the province of Western Flanders—form a collection of meadows that can be considered one of the last commons in Belgium. However, the commoners did not escape from the attempts of the national and local governments to privatize all common property during the nineteenth century. During the period 1862–82, the local government temporarily usurped the common. The commoners were expelled from their common, and management was conducted by a group of local notables. Their primary interest was in making the land profitable, rather than increasing its utility for the entitled users or guarding the sustainability of the management. As explained earlier, in the nineteenth century, governments all over Europe were designing legislative tools to abolish all common land. The attempt of the local administration to seize and privatize this common fits perfectly into this picture. Unusually, the commoners won their case in court and were put in charge of their common again from 1882 onwards. At the time of writing, the pasture is still managed by representatives of approximately 1,100 entitled users, known as *aanborgers*.

This article, however, does not focus on those nineteenth-century changes but on the eighteenth century, when the management was still conducted autonomously by the commoners. Although the archive of this common is only a few metres in length, it is exceptionally rich, in particular for the *ancien régime*. The main part of the archive consists of the customary arrangements (*keuren*) that were made between the lords and the commoners since the fifteenth century, documents regarding the regulation of the commons (*resolutieboeken*) for most parts of the seventeenth and eighteenth centuries, the lists of commoners since 1515 (*hoofdboeken*), and the detailed bookkeeping from the seventeenth century onwards which is nearly complete for the whole eighteenth century.³⁹ In addition to the processing of nearly all of these sources, all the names of the commoners from the end of the seventeenth century onwards were linked to other sources (such as population registers, parish registers, population censuses, and occupational censuses) that provided more information on their social and economic background. The commoners' degree of activity on the common and other variables could thus be connected to their economic position. Since all sources were completely processed, diachronical analyses (for example, on the basis of the population censuses) became possible. The analyses on the micro-level and on the level of the village and region made it possible to link the day-to-day practice of a CPI to the abstract theoretical framework discussed above.

The case study's sources allow us to link the regulation of commons as it was agreed upon in the charters with its actual effects in practice and with the daily lives of the commoners. Before going into detail, some background information on the Gemene and Loweiden is necessary. In order to limit the number of *aanborgers*, the use right on this common—that provided primarily grass for livestock grazing and some wood—could only be obtained via inheritance, and this only by men. Originally, both men and women were mentioned in the charters as lawful users, but over time it became a rule that women could pass on their use right to their husbands, but could not claim the use of the common themselves. The complete exclusion of women from this common was probably a gradual process that was only

³⁹ All the names of persons who received the use right between 1515 and 1965 were published in De Moor and Debbaut, *Aanborgers*, pp. 24–156.

fully completed by the eighteenth century: until then, women did appear—although not frequently—in the registers.⁴⁰ There are also several cases of widows who were allowed to use the common at least temporarily after their husbands' death. If the wife from whom the husband derived his use right died before him, the husband lost his rights. Any children produced by the marriage could, however, continue to use the common. In a few cases, a widower was able to reclaim his use right by simply marrying another woman from an entitled family.

The inheritance arrangement that regulated access to the common on the Gemene and Loweiden was not exceptional; it can be found in several other places in Flanders and the rest of Europe.⁴¹ Most likely, it was the result of the exclusion process described earlier in this article: originally all inhabitants of the villages of Assebroek and Oedelem—where the common was situated—could claim rights on the common. Being a legitimate commoner did not, however, necessarily entail usage of the common. On the basis of an analysis of the participation of the commoners during the eighteenth and nineteenth centuries, it becomes clear that more than 70 per cent of the commoners who had subscribed to the common between 1710 and 1760 were actively involved in the system, either as users (of the pasture), or as contributors (usually in the form of paid labour), or both. Among the commoners who subscribed after the 1790s, this had dropped, however, to about 50 per cent.⁴² The relative number of commoners for whom the common could be a significant economic or social advantage had diminished dramatically. This also meant that at times the number of people that might be interested in another—financially more advantageous—way of managing the collective resource was growing. This would in turn have had a considerable impact on the way the common resources were used from the 1820s onwards: land was gradually turned from pasture into arable land and separate plots were rented out.⁴³ The original method whereby the total number of livestock could be regulated was gradually left behind (see the following paragraphs).

Notwithstanding the efforts to restrict the number of new potential users of the Gemene en Loweiden, the total number of registered *aanborgers* was too high for the limited amount of space that was available on the CPR. During the eighteenth century, the total acreage of the common varied between only 80 and 100 hectares. Between 1700 and 1800, on average seven new persons per annum subscribed to the common.⁴⁴ Although there was a clear threat of population rise and there was a risk of commercialization by these commoners, in particular since the common was in the vicinity of large trading centres (Bruges and the livestock market in

⁴⁰ In the earliest *hoofdboeken*, the names of several women were registered as new members. See *ibid.*, p. 26.

⁴¹ A similar example in Flanders is the 'Vrijbroek' in Mechelen. In 1260, this was donated by Wouter Bertoud to 28 'good people'. These people and all their descendants could enjoy the use of it after having paid two schillings a year. De Vos, 'Vrijbroek', p. 30.

⁴² For the analysis of the participation level and intensity of the commoners, the names of the *aanborgers* were linked to bookkeeping. As most entries in the bookkeeping were nominative, this could be done fairly easily. For both the lists of names of *aanborgers* (*hoofdboeken*) and the bookkeeping, see City Archives of Bruges (hereafter CAB), Archief Gemene en Loweiden. Nos. 12–16 refer to three *hoofdboeken* from 1622 to 1889, and nos. 55–117 refer to the bookkeeping of the Gemene and Loweiden for each three-year period between 1693 and 1841. For a few short periods of time, the most significant one stretching from 1789 to 1811, no bookkeeping was preserved.

⁴³ For a more extensive description of the history of the common during the nineteenth century, see De Moor, 'Gemene en Loweiden', pp. 3–38.

⁴⁴ The yearly growth of the number of *aanborgers* was calculated on the basis of the analysis of all the *hoofdboeken*; CAB, Archief Gemene en Loweiden, nos. 12–16; see above, n. 42.

Oedelem), there were no particular rules limiting the commercialization of resources from this common. The commoners of the Gemene and Loweiden instead used an ingenious price mechanism. This system—whereby the commoner paid a sum of money per head of livestock that was put on the common—was set up to achieve a fairly constant level of exploitation of the CPR. The archival sources are not detailed enough to reveal the particular reasons for each of the price adjustments but figure 1, based on a detailed analysis of the available book-keeping for the eighteenth and the first half of the nineteenth century (until 1841), shows that these decisions cannot have been at all arbitrary: until the end of the eighteenth century, the changes in the number of horses and cows and the changes in the price per head of livestock were clearly related to the grazing pressure on the common (see the prices indicated underneath the X-axis of figure 1). The book-keeping of the common allows us to reconstruct and to demonstrate the effectiveness of the price mechanism. Besides the number of each type of livestock (horses, cows, and pigs), it shows the aggregated total in terms of livestock units and the number of users to whom this livestock belonged.⁴⁵

What the graph does not show, however—simply because of the lack of precise data—is the number of livestock units that were provided by non-entitled users. In general, it is assumed that only commoners were allowed to use the resources and that any other person entering and using the common was doing so illegally. The case of the Gemene and Loweiden shows, however, that not only were non-entitled users sometimes officially accepted as users, but that this practice was also a method of avoiding an unstable exploitation level. Until the middle of the eighteenth century, non-commoners could request the management of the common to let some of their livestock graze for a certain period of time. In some cases this was accepted, as in 1709 when several persons were allowed to put their livestock on the common because there was an abundance of grass. This practice was introduced because commoners could not provide a sufficient number of livestock and it provided some additional cash income in those times of heavy war duties. During the first half of the eighteenth century, most of the entitled commoners also used the common, but due to a rather low number of newly subscribing commoners, the number of animals was insufficient to achieve an optimal exploitation level.⁴⁶ Therefore, other non-entitled users were granted the temporary right to use the common, though only for a restricted number of cattle and often for only a few weeks. This and the price mechanism that was used suggest that the managers watched the grazing pressure carefully and took action whenever the optimal pressure level was not achieved.

Changes in the methods that were used to achieve an optimal grazing pressure clearly reflect changes in the socio-economic background of the commoners. Taking into consideration the extra-added number of livestock, the exploitation level of the common, on average, would have been 150 livestock units (LU). Actual population growth did not start until the second half of the eighteenth century. From the 1750s onwards, requests from non-commoners were no longer granted,

⁴⁵ The following weighing coefficients were used: cows were considered as 1 livestock unit, horses 1.2 livestock units, and pigs 0.2 livestock units.

⁴⁶ Whereas in the period 1623–99, on average 12 new commoners subscribed to the common per year, only four did so during the first half of the eighteenth century. In the century thereafter, there were again about six new members every year. See De Moor, 'Tot profijt van de ghemeensamheijt', p. 258.

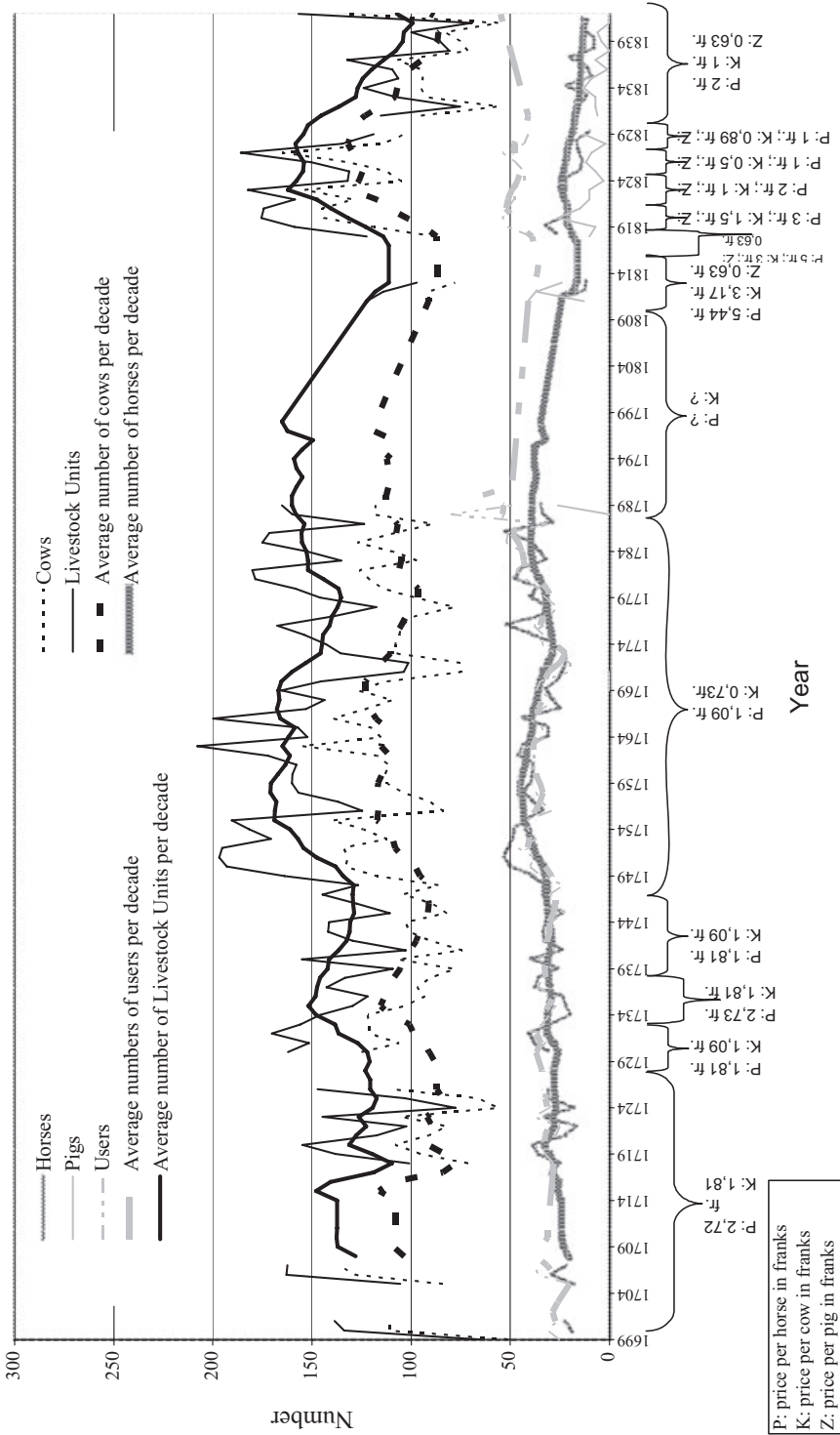


Figure 1. Exploitation level of the common, 1700–1840, in terms of the number of users, cows, horses, pigs, and livestock units

Source: CAB, Archief Gemene en Loweiden, nos. 55–117.

and between 1747 and 1788 the prices per head of cattle remained stable. Adjustments of the prices to put livestock on the common were no longer necessary until the end of that century.⁴⁷ The attitude towards outsiders changed significantly over time. In 1763, the common experienced a serious drop in the number of cows (from 155 to 115) which probably caused temporary under-exploitation.⁴⁸ Instead of allowing livestock from non-entitled users to solve this problem, as they had done before, the managers had a different solution this time: although it was commonly known that it could cause great damage to the common, they decided to accept pigs, but only those belonging to their own commoners.⁴⁹ The non-members' animals were no longer required to keep the level of exploitation stable, suggesting that the commoners now had sufficient cattle themselves and that the managers preferred to take care of their own members first. Although this decision to accept pigs on the common might have been a pernicious one from an ecological point of view, the managers of the common responded primarily to the general impoverishment of the commoners. As pigs were cheaper to keep and less demanding and choosy about their feeding than cows or horses, they became increasingly popular as substitutes for the larger cattle among the villagers. The managers must have noticed the negative effect of the pigs on the common after a while, as they stopped this practice by 1789; here again, the common as a resource was their priority, rather than the benefit of the commoners. For the period 1790–1811, no data are available. Thereafter the number of livestock pasturing on the common dropped significantly. This was partially a consequence of the reclamation of part of the common, reducing the available pastureland and thus the acceptable number of livestock, and partially the consequence of the general diminution of the average number of livestock units per person during this period. These changes in management and use can be explained by the relative importance of the common for the users: although the group of people who claimed their right kept growing, the number of active users remained more or less the same, and thus this group became—from a relative perspective—smaller and smaller. The group of commoners that did not use the common for cattle grazing exercised increasing pressure on those with cattle, to bring some parts of the land available into tillage.

Apart from the diminution at the end of the period, it can be concluded that the exploitation level obtained by the managers was overall fairly stable. This indicates that the commoners—by means of their managers—strove for constant grazing pressure. The question might be asked whether the pressure was too high for the rather small pasture. At the height of the exploitation (1750–9), the grazing pressure would have been half a hectare per livestock unit. As the livestock was only on the common during the spring and summer seasons, and as it was likely that they received extra feeding, one can assume that the total number of livestock

⁴⁷ For the period 1790–1811, there are no accounts available. For an overview of the available accounts, see De Moor, 'Gemene en Loweiden', pp. 40–3.

⁴⁸ CAB, Archief Gemene en Loweiden, no. 94.

⁴⁹ In older documents, it was stated clearly that pigs, sheep, goats, and geese were not allowed on the common because these root up the pasture land. See, for example, the charter of 1514 published in Gilliodts-Van Severen, *De la coutume*, pt. III, p. 184, and CAB, Archief Gemene en Loweiden, nos. 2–3.

units did not lead to over-exploitation of the CPR.⁵⁰ In this case, it can be assumed that the continuity of the exploitation level stems from a concern to exploit the pasture in a sustainable way.

So far, this paper has focused on the question of whether pre-industrial commoners were capable of managing their common sustainably. The measures that were sometimes taken to avoid under-exploitation show that—contrary to the belief of Hardin and others—the commoners were aware of the optimal exploitation level and how to achieve it. However, a limited number of new commoners and a stable exploitation level were only the result of a certain policy set out by the commoners. In order to achieve sufficient mutual trust and social control to enforce access rules, use rules, and price mechanisms, the participation level of the commoners needed to be sufficiently high. Ostrom supposes that systems whereby commoners participate in the decision-making process of the CPI have more chance of survival, because ‘being involved’ enhances reciprocal behaviour.⁵¹ As described earlier in this article, the number of active participants remained relatively high during the whole eighteenth century: seven out of 10 commoners who subscribed to the common would eventually also use the common. About 42 per cent of these participants would not only use the common for economic purposes, but would also take part in the actual management of the common, albeit on different decision-making levels and not necessarily continuously.⁵² However, although these figures tell us that the majority of the commoners did use the common in one way or another and that a large number of them were also actively involved in sustaining management, it does not tell us how intensively they would have been involved. One can assume that enforcement via social control requires the need for a high intensity of participation. A system whereby different individuals use the common only every now and then may not create a system with a high degree of social control. An analysis of the number of times commoners used the common per annum from their subscription to the common until their last participation shows that, from the middle of the eighteenth century onwards, the commoners’ participation intensity dropped dramatically: whereas an active participant would have used the common on average once a year at the beginning of the eighteenth century, this intensity had dropped to once every other year by the beginning of the next century.⁵³ This decreasing involvement of the commoners—those who did not participate at all were not included in these calculations—was caused by a shift in the socio-economic background of the active commoners: whereas in the first half of the eighteenth century, half the active commoners were farmers and only 35 per cent were (farm) labourers, the balance

⁵⁰ During the summer season, a cow (= 1 livestock unit) needs around 0.8 ha. However, the livestock normally received plenty of other feeding, necessitating only 0.4 ha per livestock unit of extra pasture land per annum; see Slicher van Bath, *De agrarische geschiedenis*, p. 325.

⁵¹ See, for example, no. 3 in the ‘design principles illustrated by long-enduring CPR institutions’ in Ostrom, *Governing the commons*, p. 90: ‘Collective-choice arrangements: most individuals affected by the operational rules can participate in modifying the operational rules’.

⁵² In the calculations, different forms of taking part in the management were taken into account. Participation in management included a wide range of activities, ranging from simply attending a meeting of the common or performing an administrative task to becoming an official representative (*hoofdman*) of the common.

⁵³ This participation does not only include the act of putting cattle on the common but could also involve working for the common or taking part in meetings. All possible activities in which commoners and others could take part were regarded as ‘participations’.

had shifted towards a majority of 57 per cent being (farm) labourers and only one-quarter being farmers in the second half of that century. One can assume that the common had lost some of its utility because of the reduction in the number of farmers who used the common as a surplus pasture in times of insufficient grass and fodder production on privately owned land. Labourers may not have had the opportunity to feed livestock during the winter when the common was not accessible. Since they probably had fewer cattle to feed, they would eventually also benefit less from the common as an extra source of income. It should be no surprise, then, that the number of subscribed commoners that made active use of the common diminished greatly over time.

If the intensity of participation diminishes, one needs to resort to methods other than social control to regulate the behaviour of the users. For many years, so-called *koewachters*, boys in their early teens, had been recruited to guard the livestock and to report problems or infringements upon rules. In the account book of 1791, it is recorded that the control of the use of the common was laid in the hands of an external official.⁵⁴ From then onwards, the local constable received a yearly payment to ensure the enforcement of the common's rules. Besides the lesser involvement of commoners in their commons, the increasing meddling of the local government in their affairs—a process that would culminate in the later claims on the Gemene and Loweiden by the municipality of Assebroek (during the period 1862–82, as mentioned earlier in this section)—can be considered a cause of the increasing involvement of external control mechanisms.⁵⁵

III

In this article, it has been demonstrated that social, economic, and institutional changes are equally important to understanding the way in which a common functioned. It has also become clear that these aspects are intertwined: sustainable management of a common's natural resources requires a high participation rate by commoners, and this can only be achieved if the common proves to have a high utility for the users. Achieving a resilient system implies that the different functions of the common need to be in balance with each other. Three particular criteria can help us to evaluate the long-term interaction between the three dimensions: utility, sustainability, and equity. Utility refers to the degree to which the use of the resources is adequate for the users. Sustainability refers to the effects of this use upon the availability of the resource, in the sense of an ecological optimum. Equity refers to the degree of involvement and participation of the commoners in the economic use and management of the common. This article takes a first step towards making these evaluation criteria operational. Analysing the interaction (as indicated by the arrows in figure 2) between the components (CPI, CPrR, and CPR) helps to identify the potential dangers that may bring the whole system out of balance, and thus lead to its 'tragedy'.

The strict regulation of access to the commons of the European past shows that the way in which Hardin pictured the commons—as open-access pasture lands—and their users is incorrect. There was no freedom on the commons.

⁵⁴ CAB, Archief Gemene en Loweiden, no. 106, account 1787–9; closed in 1791.

⁵⁵ For a more extensive description of the sequestration period, see De Moor, 'Gemene en Loweiden', pp. 35–6.

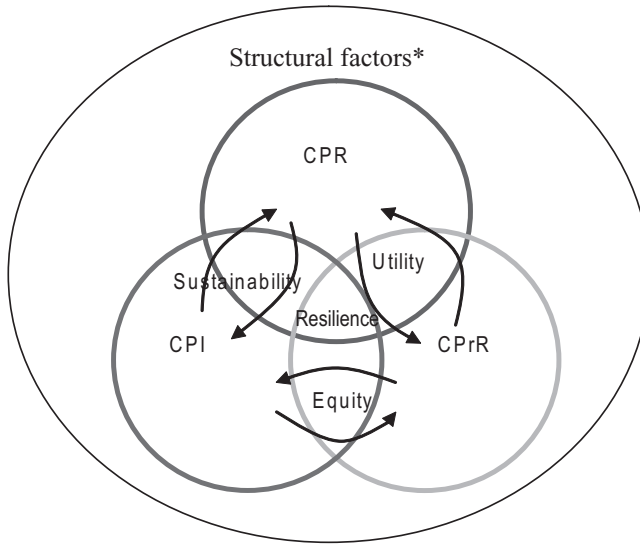


Figure 2. *The three-dimensional approach to commons: commons as Common Pool Resources (CPRs), Common Pool Institutions (CPIs), and Common Property Regimes (CPrRs)*

*Structural factors can include population growth, economic change, political processes, etc.

Commoners and representative managers of the commons were very well aware of the factors that could bring ruin to the common, such as a population increase or the commercialization of the common's resources. In practice, they were striving towards an ecological optimum, thereby trying to avoid overuse—but also under-exploitation, a danger that is mostly forgotten in the commons debate, but one that was clearly also on the minds of the commoners themselves. Their self-government also included forms of compulsory social control and participation in the decision-making process. Decisions were carefully balanced, so that objectives other than purely economic ones were taken into account. All these aspects made the common a flexible institution that could easily adapt to changing circumstances and changing needs. This has been shown for one case study, but this common does not stand alone in its success. Although we do not claim that this formula has worked for all commons, there is now evidence that if the common's managers do their job and the commoners respect the rules, a 'tragedy of the commons' can be avoided.

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- 12 'Hoofdboek. Boek van de geslachten van de Gemene en Loweede, 1622–1703'.
- 13 'Hoofdboek. Boek van de geslachten van de Gemene en Loweede, 1718–1767', copy.
- 14 'Hoofdboek. Boek van de geslachten van de Gemene en Loweede 1769–1889'.
- 55 Account 1693–5; closed in 1696.
- 56 Account 1693–5; double, incomplete.
- 57 List of payments for cattle grazing, 1698–1701.
- 58 Account 1698–9.
- 59 Account 1699–1702; closed in 1702.
- 60 Account 1699–1702; double, incomplete.
- 61 Extract from the account for the year 1699. Made in 1757.
- 62 Account 1704–6; closed in 1707.
- 63 Account 1703–5; double.
- 64 Account 1707–9; closed in 1710.
- 65 Account 1707–9; double.
- 66 Account 1710–12; incomplete.
- 67 Account 1712–17; incomplete.

- 68 Account 1718–20; closed in 1722.
69 Account 1718; incomplete.
70 Account book ‘Handboek vanden ontvanger van 1° de akkoorden over
het pastureren van de onvrije beesten 2° de schatgelden gestemd
over de beesten der aanborders, van 1719–1732’.
71 Account 1721–3; closed in 1725.
72 Account 1721–3; double.
73 Account 1721–3; double.
74 Account 1724–6; closed in 1728.
75 Account 1724–6; double.
76 Part of an account 1724–6.
77 Account 1727–9; closed in 1731.
78 Account 1730–2; closed in 1734.
79 Account 1733–5; closed in 1737.
80 Part of an account 1734.
81 Account 1736–8; closed in 1740.
82 Account 1739–41; closed in 1743.
83 Account 1742–4; closed in 1746.
84 Account 1745–7; closed in 1749.
85 Account 1748–50; closed in 1752.
86 Account 1751–3; closed in 1755.
87 Account 1751–3; double.
88 Account 1754–6; closed in 1758.
89 Account 1754–6; double.
90 Account 1757–9; closed in 1761.
91 Account 1757–9; double.
92 Account 1760–2; closed in 1764.
93 Account 1760–2; double.
94 Account 1763–5; closed in 1767.
95 Account 1763–5.
96 Account 1766–8, closed in 1770.
97 Account 1769–71; closed in 1773, copy.
98 Account 1772–4; closed in 1776.
99 Account 1772–4; double.
100 Account 1775–7; closed in 1779.
101 Account 1775–7; double.
102 Account 1778–80; closed in 1782.
103 Account 1778–80; double.
104 Account 1781–3; closed in 1785.
105 Account 1784–6; closed in 1788.
106 Account 1787–9; closed in 1791.
107 Account 1787–9; double.
108 Account 1811–13; closed in 1815.
109 Account 1818–20; closed in 1821.
110 Account 1821–3; closed in 1824.
111 Account 1824–6; closed in 1827.
112 Account 1827–8; closed in 1828.

- 113 Account 1828–9; closed in 1831.
- 114 Account 1831–2; closed in 1833.
- 115 Account 1833–5; closed in 1836 (double).
- 116 Account 1836–8; closed in 1839.
- 117 Account 1839–1841; closed in 1842.