

THE TRAGEDY OF THE COMMONS OR THE TRAGEDY OF MISINTERPRETATION IN ECONOMICS

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INTRODUCTION

For centuries common **property**, also denoted communal property and community **property**, has represented a system of exploitation or management which has been applied both to natural resources such as water, farming land, **forests, meadows, fisheries, hunting, etc.** . . and also to **ecosystems**. This application permitted, and in many cases continues to permit, the continued development of life and of **societies** based on this development, since it implemented a sustainable management of resources.

It was not until the 1950s that a number of conventional economists began to view common property as a problem which either hindered the efficient management of . natural resources or led to their being exhausted. Hence, privatisation **or**, where this was not possible (and as a lesser evil), public ownership were advocated as solutions to the above **problems**.

I intend to illustrate here that the conventional approach to the so-called problem of common property is mistaken, for three reasons which will be examined in detail below. To begin with, it is based on the confusion which reigns among conventional economists when they identify common property with unrestricted access or absence of **ownership**, and when

they **confuse** the so-called "**problem**" of common property with the concept of common property. **Secondly, the approach, albeit unwittingly,** overlooks the prominent role played by common property throughout **history**, a role which it retains to the present day. The third reason is that the so-called tragedy of the commons is merely the tragedy of a methodological individualism based on an erroneous interpretation of the concept of selfishness and the role of the State as contained in the works of Adam Smith. In the final section of this **paper**, I outline the future field of application of the concept of common property.

#### COMMON PROPERTY: PROBLEM OR CONCEPT?

One of the first economists to deal with the question of common property was **Kapp**, in 1950. It is important to note however that for this author common property was by no means a problem, but rather a type of use which was "... jealously regulated by habits and institutional restrictions imposed by **custom**" (Kapp, 1970, 112). It was only a few years later, thanks largely to the works of Gordon (1954) and Scott (1955) concerning fisheries, that common property came to be viewed as a problem which hindered the efficient management of a fishing bank. In the opinion of these two authors, "**everybody's property is nobody's property**", and therefore the solution advocated is not only private property, which in itself does not constitute sufficient guarantee of efficiency, but the existence of a sole proprietor to administer the **bank**.

Of the above two ideas of common property, the second (ie, which characterises common property as posing a problem and identifies it in terms of the **everybody's property** and the absence of ownership or free access) has found greater favour with economists, although with no apparent **justification**. Hence, most Natural Resources Economics textbooks, such as those by Dasgupta and Heal (1979), Fisher (1979), and Dasgupta (1982), deal with the question only under the general heading of "**The problem of the Commons**", while the most **frequently-used** definition of this problem requires that the following two conditions be met if a resource is to be classified as common property (Howe, 1979, 241):

1. **Unrestricted** access to the resource system by all those who care to use it.
2. **Some** type of adverse interaction among the users of the **system**.

In my view, the above conditions do not define a type of resource but rather a kind of problem which may affect the management of some natural **resources**. This was made quite

clear following the publication of the work by Ciriacy-Wantrup and Bishop (1975), who provide an accurate description of the "concept" of common property (which is really what matters) by specifying its two fundamental characteristics:

1. Distribution of property rights in resources in which a number of owners are co-equal in their rights to use the resource. This means that their rights are not lost through non-use.
2. Potential resource users who are not members of a group of co-equal owners are excluded.

One could add to the above that access to property does not require its purchase. In effect, the definition of a common property resource given by the United States Supreme Court in 1894 was as follows: "The distinctive characteristic of communal property is that every member of the community is an owner of it as such. He does not take as heir, or purchaser, or grantee; if he dies his right of property does not descend; if he removes from the community it expires; if he wishes to dispose of it he has nothing which he can convey; and yet he has a right of property in the land as perfect as that of any other person; and his children after him will enjoy all that he enjoyed, not as heirs but as communal owners". (Jurgensmeyer and Wadley, 1974, 374).

A third definition, half-way between the two above, states that common-property resources are defined as "a class of resources for which exclusion is difficult and joint use involves subtractability" (Berkes and Farvar, 1989, 7). Paradoxically, although Berkes and Farvar are familiar with the very accurate definition given by Ciriacy-Wantrup and Bishop, they prefer to use their own, which in our opinion is less clear than the former. The problem raised by their definition, as we understand it, is that it may encompass any case where the users of a natural resource fail to agree on extraction criteria, fail to observe existing agreements, or simply exploit under conditions of competition, applying the rule of capture, a resource for which the rights of ownership have not been specified clearly (Aguilera, 1987).

This is particularly true where, in accordance with the definition used by Berkes and Farvar, one may be referring to both privately-owned natural resources and public goods, or state-owned goods, the management of which may be rendered difficult due to the aforementioned causes, but which cannot correctly be called common property resources. This is true, for example, of the case mentioned by Hotelling (1931) with reference to oil drilling, in that the surface of the pocket belongs to several owners although the oil is, strictly-speaking, a privately-owned resource.

A similar problem arises in the case of water in the Canary Islands. Geologists maintain that each island has only one aquifer, that is, one which is not segmented or divided. Hence, perforations are interdependent and water extraction agreements would be **necessary**, although this does not necessarily mean that one can speak of common property, given that such an institution is non-existent (Aguilera and Rodriguez, 1989, 114). **Furthermore**, prior to the Water Act of 1990, water in the Canary Islands was a private resource, whereas it is now a public good or of public domain. Problems still exist as regards reaching **agreements**, although it should be stressed again here that private goods, public goods and common property should not be confused (Aguilera, 1987).

To put matters more clearly, a **"problem"**, such as free access to a resource and the absence of agreements governing extraction, (cf. Fisher, 1981, 86), or even the violation of existing **agreements**, is being confused with a **"concept"**, that of common **property**, which implies the existence of some clear common property rights and also a given type of institutional management. Moreover, if the same **name-common property-** is applied to this entire set of varied cases (which may include private property resources as well as state, regional or municipal public property **resources**), the problem which clouds the issue is the ensuing confusion rather than common property **itself**.

The best way to get round this confusion is to acknowledge **that:** a) Common property denotes a clear concept, such as that used by Ciriacy-Wantrup and Bishop (1975), and this type of property is totally different to private property, public property or the absence of property (Aguilera, 1987), (Bromley, 1989, 205); and b) Natural resource management which **requires** agreement between the various owners, private or **public**, represents a problem which has **nothing whatsoever** to do with common **property**. **Nevertheless**, the concept of common property, as an institution and system of agreement, can help facilitate the solution to said problem, as we shall see later in the final section of this paper.

#### A BRIEF HISTORICAL NOTE ON COMMON PROPERTY

A large number of works, usually by economists, identify common property with a problem of a lack of agreements and thus question the validity of common property - as a concept or an institution - because they link it inevitably to the exhaustion of all natural resources (Haveman, 1973), (Tietenberg, 1988), (Hartwick and Oleweiler, 1986), (Lepage, 1986), among others. However, the study of common property from a historical, anthropological and even an economic

perspective, would indicate that the exact opposite is true given that "**institutions** based on the concept of '**common property**' have played socially beneficial roles in natural resources management from economic **pre-history** up to the present" (Ciriacy-Wantrup, Bishop, 1975, 713). (See Berkes y Farvar, 1989, 6).

In reality, **anthropologists, historians, and only a few economists, are acknowledging something which Kropotkin had already examined in detail, that is, that "man's propensity for mutual help goes back such a long way and is so closely intertwined with the past development of mankind that it has been maintained to the present day, in spite of all history's vicissitudes"** (Kropotkin, 1978, 223). The most important aspect to be stressed here is that this mutual help or cooperative attitude is materialised in a "**core of institutions, habits and customs... created initially by the tribe and subsequently by the village commune, and keeps men united in societies, which are open to the progress of civilisation...**", (Kropotkin, 1978, 253).

A similar explanation can be found in Dutton, who in referring to the American Indians from the south-east of the U.S. states that "**exacting laws and practices were followed. Each band or group lived within recognized territorial limits commensurate with the size and needs of each respective body or community"** (Dutton, 1983, XX). Kapp meanwhile studies the rules governing the use of natural resources, such as land and pastures, and states that "**their use was covetously regulated by habits and institutional restrictions imposed by custom, and it is not hard to conclude that traditional societies maintained a social safety minimum when using renewable resources. Their institutional practices were the appropriate ones to prevent any serious depletion of resources"**. (Kapp, 1970, 112-113).

Further examples are unnecessary, since all of them indicate clearly that: **a) common or communal property required, or was guided by, clear and precise rules of management, and b) those rules averted or prevented the exhaustion of renewable natural resources.** However, the entire system based on common property began to fall into decline for a variety of **reasons, most notably, in Third World countries and in the United States of America, foreign invasions, trade penetration by developed market economies and/or the establishment of a colonial regime and administration** (Kapp, 1970, 113-114), (Ciriacy-Wantrup, Bishop, 1975) which subsequently led to the monetisation of the economy and the application of taxes, thereby inducing many **commune-members to flout common management rules.**

As for Europe, the most important factor behind the disappearance of common property was the deliberate and systematic attack made on this type of property by the

*State. "Village communes were deprived of their rights of communal assembly, own jurisdiction and independent administration, while the lands which they owned were subjected to the control of state officials...The state's assimilation of all social functions favoured the development of narrow, unbridled individualism..." (Kropotkin, 1978, 225-226).*

*The best-known example of this systematic destruction of common property by the State can be seen in England, where "the lords seized village commune lands and each case of plundering was ratified by Parliament" (Kropotkin, 1978, 233), and as a result the peasants were transformed from co-owners with equal rights over common property into landless workers in the feudal state. This transformation has been given the name the real tragedy of the commons (Ciriacy-Wantrup, Bishop, 1975, 720).*

*Common property currently exists in developed and underdeveloped countries alike. In the former, its presence is almost a token one, for instance, in Switzerland, Spain and in Northern New Mexico in the United States (Kutsche, Van Ness, 1981), among other countries. In the latter, its presence involves not only a means of managing certain natural resources, such as water, forests, pasture-land or fisheries, but constitutes also a model of life or style of development. (Natural Academy Press, 1986), (McCay, Acheson, 1987), (Berkes, 1989). Why, then, is common property still associated with disaster or tragedy?*

#### THE TRAGEDY OF COMMON PROPERTY, THE TRAGEDY OF INDIVIDUAL ECONOMIC RATIONALITY AND THE TRAGEDY OF MISINTERPRETATION IN ECONOMICS.

*Without doubt, the work most frequently referred to in debates on common property, - perhaps because it is a more readable article than those by Scott and Gordon-, is one by the biologist Garret Hardin, entitled "The tragedy of the commons" (1968). However, in view of the conceptual errors which the article contains, and which have been repeated systematically by economists, one gets the impression that few people have read much beyond the title. Hardin sets out to examine the problem of the growing population of the world and how to feed it, a problem for which, in his view, there exists no technical solution (which is taken to mean "one that requires a change only in the techniques of the natural sciences, demanding little or nothing in the way of change in human values or ideas of morality" (Hardin, 1968, 1243), but rather a moral or ethical one.*

*Hardin questions reasonably the success of technical solutions, such as the setting up of marine farms or the*

*diffusion* of new varieties of wheat, advocated by some scientists in order to satisfy the food requirements of a population which is growing too quickly, although nobody is prepared to renounce the excessive consumption enjoyed by a few countries. Hence, **Hardin's** affirmation that the population problem cannot be solved technically, and his remark that "a finite world can support only a finite population; there fore, population growth must eventually equal zero" (Hardin, 1968, 1243).

This last statement is no different to what was subsequently proposed by **Daly (1971)**, and later **Georgescu-Roegen (1975)**. Indeed, **Hardin** makes reference to the limitation imposed by the law of entropy, or as he calls it the dissipation of **energy**. **Hardin's** idea, in short, is that the survival of mankind hinges on ethical rather than technical change, and up to this point we coincide with his opinion. Where we do differ, however, is with respect to his explanation that common property is the cause of the whole problem. Confusion arises when **Hardin** presents the by then famous example of the shepherds, each of whom takes his flock into an area of pastures open to all- (Picture a pasture open to all-..., 1968, 1244), and, without any justification whatsoever, he identifies common property with free access.

Inexplicably, from this paragraph onwards in **Hardin's** work, **everything** is transformed into a problem caused by common property, using the examples of the deterioration of national parks, parking problems and worsening pollution. The end result is the so-called tragedy of the commons: "Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons" (Hardin, 1968, 1244). Faced with this situation, **Hardin** proposes an alternative involving private property, "An alternative to the commons need not be perfectly just to be preferable (but) injustice is preferable to total ruin" (Hardin, 1968, 1247). It is an alternative which would hardly solve the problem.. given that ultimately "...full exercise of private property rights is now virtually impossible in an ecosystemic setting" (Regier, Mason and Berkes, 1989, 114).

Clearly, then, a marked confusion exists in **Hardin**, since not only is he unaware of what common property is, and of the prominent role which it has played throughout history, but also he fails to grasp something as basic as the concept of **property**. **Hardin**, in effect, overlooks the fact that the concept of property is devoid of meaning if it is not possible to exclude all non-owners, and thus, if property really existed, there would be no unrestricted access to resources. Furthermore, if the property were really common this would imply the existence of institutional agreements between the co-owners to establish the rules for decisions

governing the management of the resource. To put it more clearly, common property would exist as an institution (Ciriacy-Wantrup Bishop, 1975, 715).

What Hardin terms common property, objectively-speaking, is merely the absence of ownership or so-called free access; cases in which, where no agreements exist to govern the exploitation of a resource, the rule of capture may prevail. In other words, if each user thinks that all that he does not extract will be extracted by others, individual competition will be sparked off, which ultimately could lead to the resource being exhausted (Aguilera, 1987). Thus, one has to rule out completely the existence of a tragedy caused by common property resources, resources which do not even figure in Hardin's article. In fact, and following Wade, "Hardin ... fails to make the distinction between situations of no property and situations of common property. The case is quite different where a joint ownership unit exists, and access is open only within the bounds of this unit. Yet Hardin and others, by ignoring the distinction, inappropriately generalise their results for no property to cover common property as well". (Wade, 1987, 101).

What, then, is the origin of the problems referred to by the author? Paradoxically, he appears to suggest it himself, given that before he presents the example of the shepherds he criticises Adam Smith for making popular the idea that any individual who seeks his own benefit, guided by the invisible hand, furthers the public interest. Hence, according to Hardin, the origin of the problems lies in individual economic rationality which is based on selfishness, although it would be more correct to say that it lies in the absurdity involved in accepting that selfishness is a fundamental condition of economic rationality. Indeed, "universal selfishness as a reality may be false, but universal selfishness as a requirement of rationality is clearly absurd", (Sen, 1989, 33). However, to settle the issue by blaming Adam Smith is, at the very least, incorrect. Nevertheless, as we shall see later, the true origin of the problems referred to by Hardin - having ruled out the supposed problem of common property - is dual in nature and, in our view, stems from an erroneous interpretation of Adam Smith, both with respect to his concept of selfishness as well as the role played by the State.

The idea that the search for private benefit leads to public prosperity, thereby justifying the separation between economics and morals, is developed by Mandeville in the Fable of the Bees, first published in 1714, although it took some time to take root. Thirty five years later, in 1759, it appeared in Adam Smith's Theory of Moral Sentiments, although the opinion expressed by Smith runs contrary to that of Mandeville. Finally, in 1776, or sixty-two years



after the **publication** of the *Fable of the Bees*, it appeared in the *Wealth of Nations*.

It is true, however, that "...**the** idea propounded by **Mandeville** (...) became popular with the expression the invisible hand" (Naredo, 1987, 61). It is equally true, as we shall see later, that the same occurred with the work of Smith as with Pareto, Cournot and others, that is, that "**anything** which consolidated or broadened the established edifice of economic science was taken from their thinking, whereas no heed was taken of considerations which transcended said field or which illustrated how limited it was" (Naredo, 1987, 323).

To put it another way, the popularity achieved by the term *invisible hand* as an expression of the separation between economics and morals can only be justified by an extremely biased interpretation of **Smith's work**. The elimination of this bias requires "a joint reading of both works -*The Wealth of Nations* and *The Theory of Moral Sentiments*- so as not to overlook **Smith's** assumption regarding the existence of a natural moral law which induces prudent men to better their own lot in specific cases only, where improving their own position does not affect others unjustly" (Kapp, 1970, 45). In other words, it is not possible to ignore "**the** importance of moral sentiments in the work of Smith and as a prerequisite of any competitive system" (Kapp, 1970, 45).

Smith considers that "**sympathy** cannot be taken to be a selfish principle, ... that doctrine of human nature that derives all sentiments and affections of love from itself, and which is all the rage in the world, but which has never been sufficiently explained, seems to me to have emerged from a confused and false interpretation of sympathy" (Smith, 1978, 142-143). Even more important is the fact that Smith clearly distances himself from the theories and doctrines which view personal usefulness or selfishness as the basis of human behaviour, when he states that "there is another doctrine which attempts to explain, through sympathy, the origin of our moral sentiments, but which differs from that which I have striven to demonstrate. It is one which makes virtue stem from usefulness..." (Smith, 1978, 161).

Sen, meanwhile, takes a similar approach to Kapp and speaks of "**the** misinterpretation of **Smith's** entire attitude with regard to motivation and markets, and of how his analysts have abandoned the sentiments and **behaviour...**" (Sen, 1989, 44). He points out also that "the support that followers and partisans of selfish behaviour have sought (my underlining) in Adam Smith is difficult to find in a more thorough and less biased reading of his work. The Professor of moral philosophy and pioneer economist did not in fact

lead a spectacularly **schizophrenic** life. Indeed, in modern economics it is precisely **this narrowing of Smith's** broad vision of human beings which may be considered to be one of the major shortcomings of contemporary economic theory. This impoverishment is closely linked to the gap separating economics and ethics" (Sen, 1989, 45). A similar line of reasoning can be found in Daly and Cobb (1989) and in Galbraith, for whom "...Smith is too wise and entertaining to be relegated to the ranks of **conservatives**, few of whom have ever read him " (Galbraith, 1982, 107).

Given the above, one has to wonder why such a partial and biased interpretation of **Smith's** ideas has persisted. Why was it only the idea of the invisible hand and the pursuit of private interest which **frequently**, although not always, furthers unintentionally the interests of society that became popular? Moreover, without alluding to moral sentiments and the effects of this pursuit, **Smith's** distinct reference to "...**avarice** and ambition in the rich, in the poor the hatred of labour and the love of present ease and enjoyment..." (Smith, 1965, 670) or his statement that "Wherever there is great property, there is great **inequality**. For one very rich man, there must be at least five hundred poor, and the affluence of the few supposes the indigence of the many" (Smith, 1965, 670), are prime examples, together with countless others to be found in his work, of the clear and express negation that the public good is attained through the pursuit of individual benefit.

One could also wonder why **little** heed was paid to **Smith's** opposition to corporations or, for example his comment that "to expect, indeed, that the freedom of trade should ever be entirely restored in Great Britain, is as absurd as to expect that an Oceana or Utopia should ever be established in it. Not only the prejudices of the public, but what is much more **unconquerable**, the private interests of many individuals irresistibly oppose it" (Smith, 1965, 437-438).

Finally, there remains the question of his opposition to State intervention, although one must bear in mind the context in which Smith sets **this**. To begin with, one needs to take into account the "intellectual context of the 18th century" (Kapp, 1970, 19) which conditions and inspires social scientists who seek supposed regularities or natural laws which governed economic and social life then. Secondly, one should not overlook, again within the aforementioned context, what Smith saw as the **State's** three duties of great **importance**: "...**first** protecting the society from the violence and invasion of other independent societies; secondly, the duty of protecting, as far as possible, every member of the society from the injustice or oppression of every other member of it, or the duty of establishing an exact administration of **justice**; and, thirdly, the duty of

**erecting and maintaining certain public works and certain public institutions, which it can never be for the interest of any individual, or small number of individuals, to erect and maintain. . .**" (Smith, 1965, p. 651 onwards).

**Furthermore, it should not be forgotten that the system of natural freedom, and hence that of "free" competition, is subject to justice. "Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man, or order of men"** (Smith, 1965, 651). Kelso, by no means a radical economist, is therefore right in seeing the famous invisible hand as being really **"the hand of society expressed in the policies and institutions it prescribes to direct play by the individuals..."** (Kelso, 1967, 14). This interpretation of the invisible hand coincides basically with that proposed by Polanyi, despite the ideological gulf separating the two authors, who sees the free market as a "social institution" (Polanyi, 1989, 71), in the sense of a package of social legislation. There **is, however,** a difference between the two: whereas Kelso considers that the institutions maximise, presumably, **society's** welfare, Polanyi reckons that they will benefit certain special groups only.

In short, caution is required when speaking of **Smith's** opposition to State intervention, an opposition which, in our opinion, extended also to the behaviour of civil servants and **bureaucrats**. In any case, this latter issue can best be understood by recalling that "the constant interference by civil servants prevented the development of trades, and caused the complete ruin of most of them; hence, as early as the 18th century, **"economists, in rebelling against State regulation of production, were voicing a widespread and fully-justified discontent"** (Kropotkin, 1978, 257) (the bold print is ours).

From what we have seen, it is only fair to state that: a) the **so-called** tragedy of the commons, **objectively-speaking,** has nothing to do with common property and b) that any economist who has taken the trouble to read the **original** texts of certain leading authors, who has been careful not to take the ideas out of their original context, and has compared them to the biased, **atemporal** and decontextualised interpretations made by the ardent supporters of the authors in **question** and included in most textbooks, will arrive inevitably at the sad but nonetheless true conclusion that misinterpretation is quite commonplace in economics. Moreover, if we acknowledge that economics is based largely on speculation and **controversy,** we can understand **Hardin's** confusion much more readily, given that "the public, on its own, is incapable of penetrating the **smokescreen** of confusion and economic mysticism. . ." (Mishan, 1984, 11).

Let us not forget, however, that Hardin is a biologist and thus his lack of familiarity with history and economic literature is pardonable. What is not so pardonable, and indeed is a source of considerable concern given the above, is: a) the fact that many economists forget, or interpret in a biased or interested manner, the ideas of Smith, and b) the lack of reflection, save for notable exceptions such as Ciriacy-Wantrup and Bishop (1975), Bromley (1984) and one or two others, displayed by economists who have studied the issue of common property from the same standpoint as Hardin.

The first of these aspects has already been dealt with above. In the case of the second, prestigious and renowned specialists in the field of natural resources economics such as Howe (1979), Hartwick and Olewiler (1986) and Tietenberg (1989), who, in addition, have written a number of the textbooks used most by students of Resources and Environmental Economics, persist in systematically confusing common property with free access. Another author of a highly-regarded text-book on the subject, Fisher (1981), although he too is guilty of the same error, does hint at the confusion, without clearing it up, when he states that the problem of common property may arise when the users who "freely" use the resource fail to reach cooperation agreements (the inverted commas are my own). Even Dasgupta (1982) who, in spite of his criticism of a number of inaccuracies by Hardin, entitles section 6.4 of his textbook "Free-entry into common property resource", in true Hardin fashion.

Of the textbooks consulted, only Pearce and Turner (1990) do not commit this "common error". They distinguish correctly between private and communal rights (p. 71) and stress the importance of drawing a distinction between the situation of balance in the case of free access and in that of common property (p. 250). Kapp, an economist, had indicated correctly the difference between private property and common property, and also the role of institutional agreements in the management of resources of this type (see above). It appears that conventional economists are currently beginning to accept and regain the historical and conceptual memory of what common property was and is.

BY WAY OF CONCLUSION: THE FUTURE OF COMMON PROPERTY OR COMMON PROPERTY AS THE FUTURE?

It has taken a long time for conventional economists to acknowledge the difference which exists between common property and free access and, consequently, to begin to do away with the confusion surrounding the question of common property, which is an elementary rather than a complex issue. In the light of the above, and in view of how important the concept of common property is for the future

of **mankind**, it is reasonable to cast doubts on the capacity of conventional economics to table valid proposals concerning this **future**.

This is completely logical given that the generalised use of closed models in economics has determined "...the scope of conventional analysis, the formulation of basic concepts and, last but not least, the limiting of the range of its subject matter" (Kapp, 1978, 127). In reality, **however**, economic systems are **open**, that is, they form part of a broader political and institutional system which, in turn, is inevitably linked to the ecological system (Kapp, 1978, 128). The conclusion is quite unequivocal: concepts which work under closed system conditions fail in those of an open system.

Since Georgescu Roegen's very important book (1966) and Boulding's famous article (1966), an increasing number of publications have studied approaches relating to what is currently denoted Ecological Economics and the corollary of this, Sustainable Development. Examples include Pearce (1973, Kapp (1978), Hueting (1980), Martinez Alier (1987), Naredo (1987), and Daly and Cobb (1989). The logical conclusion reached by most of these authors is that a conceptual rebuilding of economics is **required**, a task which some of the economists mentioned above have already embarked upon, and that no individual or partial solutions exist given the multiplicity of economic and ecological interdependences in our global-world system.

If we accept that "ecological economics studies how ecosystems and economic activity interrelate" (Proops, 1989,60) and that "...the organisation of principles of economic systems which are steered by exchange values is incompatible with the requirements of ecological systems and the satisfying of basic human needs" (Kapp, 1978, 132) (see Pearce, 1973), it seems clear that this rebuilding cannot be put off any longer. All this suggests that the concept of common property - which is taken to mean an **institution**, along the lines of the definition given by Ciriacy-Wantrup and Bishop- where cooperation is superior to competition, could play a vital part in this **much-needed** conceptual rebuilding of economics. At the same time, it would enable us to solve the problems posed by the management of resources, or rather ecosystems, where users -which at the end of the day we all are- find difficulty in reaching agreement.

It is clearly obvious that competitive solutions - supposing that competition still exists- and the institutional or legal framework that regulates these solutions are incapable of assuring that life will be maintained. If, as we have seen above, the concept of private property is devoid of meaning in a context in which

**the** fundamental problem is not the management of an isolated resource but rather the management of an **ecosystem**, the idea of cooperation is much more appealing than **competition**, both from a theoretical and an empirical **point of view**.

As Naredo points out ,**"If** the concern for the resources on which the biosphere and the human race are founded is to be given its rightful **place**, if life values are to take preference over monetary interests or if the **selfish**, unconnected interests of users are to be overridden by their collective interests, cooperation and not confrontation must **prevail**.**In** contrast to the current economic approach, the ecointegratory approach regards cooperation rather than confrontation as the behaviour most suited to its **aim**", (Naredo, 1987, 517).

By way of **summary**, there is much more to the concept of common property than its mere application in the management of a natural **resource**. It is fundamental to the management of ecosystems. The planet Earth can be considered to be an ecosystem or a set of interrelated systems for **which** sustainable management is possible only through the subscribing of world agreements to apply certain principles (Daly, 1990), (Aguilera and Castilla, 1990). There can be no doubt that although the problem facing us here is not one of common property, the ideas and principles used in the management of common property resources are indeed applicable. It can be asserted, therefore, either that common property as an institution has a promising future or that the future of mankind depends on the application of **the** concept of common property. Who is interested in that future?

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