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by

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Conservation Value

ABSTRACT

This paper outlines the significance of the concept of conservation value and discusses ways in which it is determined paying attention to views stemming from utilitarian ethics and from deontological ethics. The importance of user costs in relation to economic decisions about the conservation and use of natural resources is emphasised. Particular attention is given to competing views about the importance of conserving natural resources in order to achieve economic sustainability. This then lends to a discussion of the value of conserving natural resources in order to meet the moral obligations of present generations to future generations. Anthropogenic views of the value of conserving natural resources (for example, derived from utilitarian ethics) are contrasted with views stressing mankind's obligations to nature (ecocentric views). The latter are often based on deontological ethics.

Keywords: anthropogenic values, conservation value, deontological ethics, ecocentric values, economic sustainability, intergenerational equity, natural resources, neo-Malthusianism, precautionary motive, sustainability, sustainable development, user costs, utilitarian ethics.

JEL Codes: Q01, Q20, Q30, Q50, Q51

Conservation Value

The Concept and its Significance

Conservation value refers to the value or worth of sparing or preserving objects, including natural resources. The destruction, use or consumption of natural resources now often reduces their future availability and can have unwanted consequences for humankind and for nature. Other things unchanged, the greater is the conservation value of natural resources, the stronger is the case for conserving these. Failure to take adequate account of the conservation value of natural resources is likely to result in lack of economic sustainability and result in future impoverishment of individuals and groups of individuals.

How is Conservation Value to be Determined?

Views differ about how conservation value should be determined. This is most apparent in relation to the conservation of living natural resources, such as wildlife, for example, elephants. Differences of opinion appear to be less marked in relation to the conservation value of inanimate natural resources.

Economic measures of conservation value rely on monetary indicators of it. The most frequently used economic method of determining the conservation value of a natural resource (such as the value of the continuing existence of elephants or of maintaining the Grand Canyon free of smoke haze) is to determine the amount individuals are willing to pay, as a whole, for the preservation of such features. An alternative approach, adopted occasionally, is to determine the amount of compensation that individuals would be willing to accept to forgo the natural resources under consideration.

Economic approaches to determining conservation value are mostly man-centered (anthropocentric). The aim of such methods is to maximize the fulfillment of the desires of individuals to the maximum extent possible given the limited availability of natural resources. The desires and wants of individuals (humans) are the determinants of economic measures of conservation value. This economic approach has its roots in

utilitarian philosophy, and is applied to decisions about the conservation of both animate and inanimate natural resources.

Other views have been expressed about how conservation values should be determined. Philosophers who adopt a deontological stance argue that humans have certain duties or obligations they ought to meet independently of their own selfish desires. For example, it has been said that mankind has a duty to steward and to conserve nature (John Passmore, 1914-2004). The American conservationist, Aldo Leopold (1887-1948) argued that humankind has a duty to conserve natural systems as a whole, that is in the whole web-of-life. His "land ethic" calls for the protection of both wild animals that are regarded as pests by humans (such as wolves and coyotes) and those that are not.

Some individuals believe that humans have a duty to conserve nature and to be kind to sentient beings because this is divinely commanded (possibly the view of St Francis of Assisi) or that it is a consequence of higher order religious considerations, as in Hinduism and in Buddhism.

Utilitarians (for example, John Stuart Mill, 1806-1873) are critical of deontological valuation on the grounds that it tends to be subjective, that different deontologists propose conflicting sets of values, and often these values are not operational from a human perspective. For example, while it might be claimed that humankind has a duty or obligation to protect nature or to conserve species, the extent of that duty is not well specified. For instance, those who believe that humankind has a duty to protect nature often differ in their views about how much economic sacrifice humans should make to protect a particular species although all conservationists agree that some sacrifice is called for.

Despite these problems, social or community values do exist about how humans should act in relation to the conservation of nature. These prevailing values often alter with the passage of time, as has happened in Western societies according to John Passmore (1914-2004), and they frequently differ between societies for cultural reasons. To some extent, these variations are reflected in economic valuations because

the desires of individuals are partly a reflection of the social values in the community or society in which they live.

User Costs

Economists usually maintain that in order to determine the worth of conserving a natural resource, one must take into account its user costs. User costs are the future economic benefits forgone by consuming or not conserving a natural resource now. If there are benefits now from consuming a resource or failing to conserve it, these ought to be compared with the consequential reduction in future benefits, if any, that result from this. If a cost is incurred now in preserving a natural resource, this should be compared with the avoidance of loss in future benefits in order to determine the worth of conserving the resource. Taking into account such considerations, the optimal economic choice is the one that maximizes net benefits, that is one that balances gains from lack of conservation now against future benefits forgone.

When inadequate account is taken of user costs, this can result in avoidable future impoverishment. It is a serious problem when there is unregulated access to natural resources, such as water bodies, forests, fisheries, minerals and so on. It is one possible consequence of what has been called by Garrett Hardin (1915-2003) the tragedy of the commons.

A number of ways have been suggested for overcoming such problems. These include the establishment of appropriate communal rules for the use of such resources (a policy recommended for example, by the sociologist Elinor Ostrom, 1933-) state regulations of their use, and a policy of providing for private property rights in these resources. The latter approach may be combined with the operation of a market system. However, it is not economic to establish private property rights in all natural resources. Nevertheless, in cases where such rights can be economically enforced, the owners of the natural resources have an economic incentive to take into account the user costs of the resources owned by them.

Whether or not they will conserve resources in a socially optimal economic manner depends on several factors. Some scholars claim that in market-based economic systems, natural resources will be utilized at a faster rate than is socially optimal.

Reasons given by these scholars include the likelihood that individuals will place a high weight on current benefits compared to deference benefits because of strong preference for current compared to future consumption, or because of uncertainty about future events, or because of excessive optimism about future economic possibilities. Furthermore, the user costs envisaged by individuals in isolation can be lower than that which actually eventuates because the magnitude of user costs can depend on the decisions of the totality of individuals about the conservation of natural resources.

An additional problem is that conservers of some types of natural resources can only appropriate a small fraction of the economic benefits obtained by the whole society from their actions. For example, while the conservation of tropical forests can bring global benefits in terms of the maintenance of biodiversity and the sequestration of carbon dioxide (and thereby, help to reduce the anticipated severity of global warming), forest-dwellers and those living in tropical countries are only able to appropriate a small fraction of these global benefits. Therefore, they have little or no incentive to conserve forests. Put differently, their user costs for these natural resources are much lower than are the global user costs of deforestation.

In general, when environmental spillovers occur (either favorable or unfavorable) from the activities of individuals or entities, they do not take adequate account of user costs from a social point of view. For example, those entities that emit greenhouse gases as a result of their economic activities add to the likelihood of global warming and consequently, to global environmental deterioration. Because these effects are mainly external to these entities and air space is an open-access sink for air pollutants, they have no economic incentive to curb their emissions and conserve air quality. This is so in the absence of taxes, charges or other regulations on their emissions of airborne pollutants.

The Value of Conserving Natural Resources to Achieve Economic Sustainability

Sustaining the level of future incomes and well-being of humans depends on the adequate conservation of natural resources. Natural resources generate economic value. Some produce material commodities (for example, wild fish stocks) and others provide intangible economic values, such as that obtained from recreation in natural

parks or from the mere appreciation of wildlife and its existence. Loss of these assets can reduce the future well-being of humans. Nevertheless, opinions differ about the extent to which natural resources should be conserved.

Technological optimists (they include Friedrich Engels (1820-1895) and Julian Simon (1932-1998)) believe that reductions in the stock of natural resources (a potential source of diminishing productivity) can be compensated for (or more than compensated for) by advances in science and technology, and by the use of substitutes for natural resources that become increasingly scarce. For example, in their opinion, as the remaining stocks of oil decline, substitutes will be increasingly utilized and the cost of using these can be expected to decline as a result of scientific and technological progress. Furthermore, resource optimists often claim that the remaining stock of many natural resources is larger than is usually estimated.

Neo-Malthusians are wary of these views. In their opinion, there is no guarantee that scientific and technological progress will be sufficient to offset the economic benefits forgone as a result of the loss of irreplaceable natural resources. Secondly, they warn that unmitigated pollution and waste generation from economic activity can cause irreversible harm to natural environments or harm that can only be reversed at considerable cost and often a long lag. Advocates of this point of view include Herman Daly (1938 -) and Nicholas Georgescu-Roegan (1906-1994). Members of the Club of Rome, for example Dennis H Meadows (1942 -), also warned that increasing scarcity of minerals due to their depletion with economic growth could threaten sustainable economic development.

Note that the reasons suggested by neo-Malthusians for limits to economic growth differ from those of Thomas Robert Malthus (1776-1834). Neo-Malthusians attribute the likelihood of unsustainable economic growth to a reduction in the quantity and quality of natural resources as economic growth proceeds. This was not an aspect stressed by Malthus. He argued that higher incomes would stimulate population increases and that food supply would increase at a slower rate than the growth in population, thereby reducing incomes per head. Agricultural productivity (production per head) in his opinion would fall because more marginal land would have to be brought into production to feed an increased population and existing agricultural land

would have to be worked more intensely. Both extension and intensification of agriculture were predicted with increased human population and agricultural production was assumed to be subject to the law of diminishing agricultural productivity. Both David Ricardo (1772-1823) and Friedrich Engels (1820-1895), however, were of the view that the operation of this law could be offset by technological progress. None of the prominent economist (whose thinking was influential in the nineteenth century) emphasised losses of natural resource and deterioration in land quality as being major barriers to the maintenance of agricultural productivity. By contrast, neo-Malthusians stress the importance of such factors, although many believe that the operation of the law of diminishing marginal productivity is also likely to be a constraint on economic growth.

Many (probably most) neo-Malthusians do not accept Malthus' theory of population growth but are concerned that rising levels of economic production (consumption plus investment) will place increasing strains on global natural resources and limit economic growth. Rising levels of economic production are usually associated with higher levels of output of man-made commodities per head of population or higher levels of population. The difference in the thinking of Malthusians and neo-Malthusians reflects changing historical conditions. The environmental and natural resource implications of the Industrial Revolution had not been fully appreciated in the early nineteenth century.

The Precautionary Motive

The (user) costs associated with the consumption, destruction or degradation of natural resources are often uncertain. It has been stressed that when such uncertainty exists, it is rational to err in favour of the conservation of natural resources because this keeps options or choices open for the future. This is known as the precautionary principle. While the amount of precaution that it is rational to display in conserving natural resources is open to debate, the conservation value of natural resources is increased by the presence of uncertainty in circumstances where the precautionary principle applies.

Future Generations and Conservation Value

It has been contended that current generations have a duty when using natural resources to consider the impacts of this use on the economic well-being of future generations and to adopt measures that will avoid the impoverishment or reduction in income of future generations as a consequence of resource depletion. In general, this point of view is accepted in the Brundtland Report, released in 1987 by the World Commission on Environment and Development. This commission was chaired by Gro Harlem Brundtland (1939-). If this objective is accepted, the question arises of what steps need to be taken by current generations to avoid the impoverishment of future generations. Opinions are divided about what measures are necessary to avoid an unwanted reduction in the incomes of future generations. Some argue that greater attention needs to be given to conserving natural resources whereas others believe a more suitable bequest for future generations would be to produce more man-made capital now (albeit at the expense of the conservation of natural resources) and pass this on to future generations.

Nevertheless, both these strategies are based on the premise that policies most beneficial to mankind should be adopted. Therefore, they are anthropocentric in their objectives. Consequently, they can result in policies that conflict with the objectives of those individuals who believe that humankind has a duty to conserve nature, even if this requires some sacrifice of the well-being of human kind. Thus mainstream economic views may result in less conservation of nature than that favoured by those with ecocentric values. Ecocentrics are likely to be most strongly opposed to those who advocate greater economic growth and increased production of man-made capital and to be less opposed to neo-Malthusian policies. Economic policies usually reduce the stock of natural capital which in turn, tends to decrease biological diversity.

Summary

In considering the extent to which natural resources should be conserved, it is necessary to take account of their conservation value. Opinions differ about how conservation value should be determined. Most economists employ the concept of user costs in measuring conservation value and adopt monetary measures of conservation values. They employ an anthropocentric approach to valuation; that is, one based on what humans desire. A different point of view is that humankind has

duties or obligations beyond satisfying its own desires, for example, a duty to steward and care for nature. Adherents to this point of view can be expected typically to place greater value on conserving nature than that of the general population. Although the concept of conservation value is essential for rationally making decisions about the conservation of natural resources, this value varies with ethical or moral considerations. Furthermore, because of uncertainty about future events, individuals having the same norms may have conflicting views about appropriate conservation policies as has become apparent in debates about global warming. Nevertheless, there is a widespread view that the value of conserving the world's remaining natural resources is increasing because their available stock is being reduced as economic growth continues.

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