

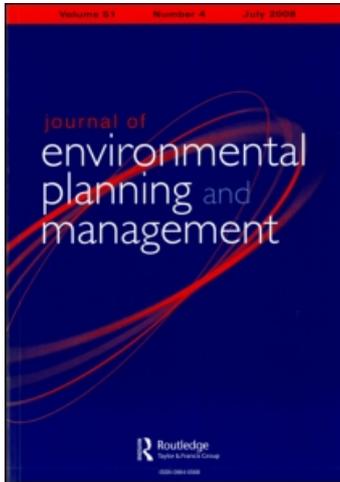
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### Sharing environmental space: the role of law, economics and politics

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## Sharing Environmental Space: The Role of Law, Economics and Politics

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**ABSTRACT** *The concept of 'environmental space' has been put forward as a means for providing specific meaning to sustainability. The concept combines the idea of the existence of environmental limits with a strong principle of environmental justice. It has been used as a basis for the development of sustainable action plans for many European countries, and has attracted political interest. However, thus far, the concept has found limited application by governments. The paper identifies and discusses several issues that need to be addressed for the environmental space approach to be implemented. Three main options for the institutionalization of the approach are discussed: within the legal-constitutional framework (as rights and obligations), within the economic system (as environmental property rights), and through green planning (as specific objectives and targets contained in national environmental plans or strategies). The paper discusses the ability of the three options to deal with the issues identified, assessing their relative advantages and disadvantages, and to what extent these options are complementary. Finally, conclusions are drawn about the viability of the concept of 'environmental space'.*

### Introduction

The concept of 'environmental space' has been put forward as a tool for the operationalization of the principle of sustainability. In 1992, the concept was developed and applied by Friends of the Earth in the Netherlands in an *Action Plan Sustainable Netherlands* (Buitenkamp *et al.*, 1992/1993). The Action Plan aroused much interest among environmentalists and policy makers in Europe, and was followed by a Sustainable Europe Campaign that led to the publication of a report that applied the concept at the European level (Friends of the Earth, 1995). This study, *Towards Sustainable Europe*, was translated into 12 languages, and was followed by the production and publication of *National Studies* in more than 20 countries (Carley & Spapens, 1998). In the Netherlands and Denmark, in

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particular, the concept of environmental space as a basis for future policy development has drawn interest from policy makers (Carley & Spapens, 1998; Friends of the Earth Netherlands, undated).

These developments suggest that the concept of environmental space has a certain attraction to policy makers. Given the strong link between the concept of environmental space and equity, it also appeals to those who advocate environmental justice (Athanasίου, undated; Sachs *et al.*, 1998). Hanson (1999) argues that the concept has a good chance of becoming quite fashionable. However, despite this appeal, the concept raises a number of questions and issues, and whether it will be adopted widely as a viable tool for implementing the principle of sustainability, within and across countries, is at this stage still an open question. The viability of the concept is the subject of this paper.

First, a range of questions regarding the concept of environmental space are addressed: What is environmental space? What issues does it raise, and in what way(s) can it assist in the operationalization of the concept of sustainability? From this discussion, several criteria are distilled regarding the viability of the concept of environmental space. Second, three potential ways of institutionalizing environmental space are explored and assessed on the criteria identified: (a) codification in law; (b) the management of environmental space by economic means; (c) the management of environmental space through (green) planning. Finally, the political viability of the concept is considered, and conclusions are drawn.

### Environmental Space and Sustainability

Since the notion of 'sustainable development' has come to dominate the world stage in discussions about development and environment, it has been interpreted in so many different ways that it has been argued that it has become meaningless or even delusive as a principle or goal, and should be abandoned (Caldwell, 1990; Beder, 1994; Richardson, 1994, quoted in Lafferty, 1996). However, abandoning the concept may not be that easy as it has already become common currency and been institutionalized across the world and has acquired ethical appeal (Lafferty, 1996; Bührs, 1997). For that reason, and to promote the adoption and implementation of (more) meaningful sustainable development policies (Lafferty & Meadowcroft, 2000), it is important to evaluate the merit and potential of the concept of environmental space.

According to Davidson, the notion of 'environmental utilization space' was first introduced by Horst Siebert in 1982, and can be defined as "The total space provided by the earth for our use without diminishing the possibilities for the future" (Davidson, 1995). In the Netherlands, the concept (*milieugebruiksruimte* in Dutch) was used by Opschoor in 1987 to describe the amount of economic 'space' available within ecological limits (Andriess, undated). In the *Action Plan Sustainable Netherlands* it is defined as "the space that the earth (nature) provides for humans (and other species) to exploit" (Buitenkamp *et al.*, 1992/1993, p. 9). Others describe it as "the area that human beings can use in the natural environment without doing lasting harm to essential characteristics" (Sachs *et al.*, 1998, p. 12).

Striking about these definitions of environmental space is their vagueness and apparent circularity: 'space' is defined in terms of 'space', and what the criteria or defining elements of 'space' are is not made clear in these definitions.

Carley & Spapens (1998, p. 9) provide a clearer indication of these criteria, by stating that:

Environmental space is the total amount of energy, non-renewable resources, land, water, wood and other resources which can be used globally or regionally:

- without environmental damage
- without impinging on the rights of future generations; and
- within the context of equal rights to resource consumption and concern for the quality of life for all peoples (*sic*) in the world.

They also add that:

The environmental space approach is based on a quantitative and qualitative assessment of sustainable resource use at the national level compared to the 'fair share' calculated on a global or regional basis, and policies and value changes to accommodate development based on that fair share without loss of quality of life.

This interpretation of environmental space can be seen to embody concerns about ecological limits, resource use, and equity. In these respects, it builds upon the concept of sustainability as advanced in the Brundtland report. The main difference between the two concepts lies in the claim that the environmental space concept provides clearer guidance and specificity for policy development. In fact, the environmental space concept has been developed with the express aim to clarify what sustainability means, to "make sustainability concrete" (Buitenkamp *et al.*, 1992/1993, pp. 17–18).<sup>1</sup>

Although it may appear that the concept of sustainability, as promulgated by the Brundtland report, is based on the recognition of limits,<sup>2</sup> it has been argued that, in fact, the introduction of that concept moved environmental discourse away from the notion of limits towards the idea that development and environmental protection are compatible (Torgerson, 1995). In the report, the concern for socio-economic conditions is of prime importance, and although concern for the protection of ecosystems and the continued availability of resources is expressed, these are depicted as flexible conditions associated with technology and the ways decisions are being made, rather than limits. As a result, and given the enormous influence of the report on global environmental and developmental discourse, the notion of sustainability has become a very fluid and ambiguous concept (Wackernagel & Rees, 1996).

The importance of the notion of environmental space lies in three things: first, that it re-introduces the idea of limits at a time when, politically, the notion of limits has been pushed into the background; second, that it provides a basis for operationalizing the concept of sustainability in concrete, measurable terms; third, that it casts the notion of limits in a form that highlights distributional and equity issues.

In contrast to the earlier concerns about the 'Limits to Growth' associated with the quantities of resources available for human use, the proponents of the concept of environmental space are concerned foremost about the ecological impacts of resource use: "... even if resources are not limited, the environmental impacts of resource exploitation set limits to the sustainable extent of that exploitation" (Carley & Spapens, 1998, p. 60). Although it is not possible to

define environmental limits with precision, it is not hard to find examples where (human) resource overuse has brought about the collapse of resources and ecosystems, with severe consequences for those who depended on them.<sup>3</sup> Proponents of the notion of environmental space advocate a conservative (precautionary) approach to the use of resources based on the best available knowledge of these limits.

The limits on the use of a range of resources are calculated on the basis of their estimated continuous availability (renewability), their ability to be reused (recycled), and their effect on the environment (such as CO<sub>2</sub> emissions). In the case of particularly harmful substances, the limit is set at zero (implying the banning or phasing out of such substances). Although it is admitted that these calculations of available space are 'rough' (Buitenkamp *et al.*, 1992/1993), and that they involve making (value) judgements and debate, they are considered good and robust enough a basis for providing policy guidance, better than well-meaning but vague commitments to sustainable development (Carley & Spapens, 1998; Sachs *et al.*, 1998).

Almost inevitably, the reliance on environmental space as a means for operationalizing the principle of sustainability draws attention to issues of environmental equity and justice. Based on the acknowledgement of limits, the calculation of environmental space (available and used) highlights the question of distribution of, and access to, resources. Therefore, it is not surprising that the environmental space approach to the operationalization of sustainability is accompanied by the strong egalitarian principle that all people have the right to the same amount of resources (Buitenkamp *et al.*, 1992/1993; Carley & Spapens, 1998; Friends of the Earth Netherlands, undated; Friends of the Earth, 1995; Sachs *et al.*, 1998).

Based on the calculation of the total (global or regional) amount of space available, per capita space (resource) availability can be calculated by dividing the total amounts by world (or regional) population. This then can be used as a basis for calculating the entitlements of each country to a particular resource (assuming an equal distribution of resources over all people in the world), and compared to existing levels of resource use of countries. The difference between these figures indicates the amount of over- or under-consumption per country which, in the case of over-consumption, can be labelled the 'sustainability gap' (the gap between what a country presently uses and what it should use to remain within sustainable levels of use). According to these calculations, most developed countries consume resources well beyond sustainable levels. In general, Europe, the USA and other rich countries use and consume resources way above the environmental space that they are entitled to on a per capita basis (Carley & Spapens, 1998).

Even though the environmental space concept can provide specific guidance towards the operationalization of the concept of sustainability, various questions and issues need to be addressed before it can be put into practice.

### **Environmental Space as a Basis for Operationalizing Sustainability: Issues and Obstacles**

Although, at face value, the concept of environmental space as a means of making sustainability concrete may seem plausible or attractive, some difficult issues will need to be resolved, and considerable obstacles overcome, if it is to be adopted by decision makers across the globe. The main issues raised in this

section pertain to the operationalization of the concept associated with interpretation, issues related to distributional justice, and implementation issues. However, perhaps the biggest obstacles to the adoption of the environmental space concept are of a political nature. These will be discussed in a later section.

### *Interpretation and Operationalization*

As noted above, an important rationale for putting forward the notion of environmental space is the desire to make the concept of sustainability concrete. It is felt that the latter concept has become too vague and ambiguous, too much subject to different interpretations and political manipulation. By contrast, the concept of environmental space is narrowed down to specific resources and defined (as much as possible) in terms of quantitative limits and objectives. Although inevitably this entails dealing with uncertainty and differences in interpretation, limits and targets are seen set as 'best guesses' that will probably need revision (up or down) over time, depending on an evolving state of knowledge and changing attitudes to what are acceptable risks. It is one thing to want to make sustainability 'concrete', but another to turn it into a rigid harness.

A more problematic issue associated with determining environmental space (as a 'concretization' of sustainable development) relates to the predominant focus on resources in an ecological context. Although the ecological and resource dimensions are essential elements for any operationalization of sustainability, there is also a social dimension that is much harder to define, quantify and operationalize. For many people, environmental quality, and its sustainability, relates to the characteristics of, and developments in, the built/human environment. As Hirsch (1977) and others (Douthwaite, 1992/1993; Hamilton, 2003) have pointed out, there are social limits to growth, in the sense that people's quality of life experience in a number of respects deteriorates with continued development. Development which does not take into account such limits is likely to be as unsustainable as development that does not respect ecological and resource limits.

Defining and operationalizing such social limits or values poses a challenge to those who wish to make sustainability concrete. It has been noted (Hanson, 1999, p. 209) that the concept of environmental space, as elaborated in several reports, "offers limited (if any) scope for the sustaining of goods which are not resources or sinks". However, that does not mean that it is impossible to translate this dimension into meaningful, even quantitative, objectives. *Towards Sustainable Europe* describes various kinds of indicators that aim to provide some measure of human or social well-being, such as the Human Development Index, the Index of Sustainable Economic Welfare and social indicators. The report also discusses the connection (and differences) between income and well-being, the importance of work and employment, "consumption, environment and the good life", and value change (Friends of the Earth, 1995, pp. 125–134; 164–167; 194–201). Yet, these approaches mostly reflect an individualistic interpretation of 'quality of life' and fail to address the collective, socio-cultural and political dimensions of a sustainable world. Getting agreement on how these limits or values can and should be operationalized and translated into more or less specific goals or targets, alongside those for resources and sinks, remains a considerable challenge.

*Environmental Justice*

A second major issue that needs to be more fully addressed for the environmental space concept to be adopted and implemented is that of environmental and/or distributional justice. As noted above, the proponents of environmental space advocate that environmental space should be distributed equally per capita over the world's population. Apart from whether this is a politically feasible proposition (discussed later in this paper), it is also an ethically debatable principle.

Whether a reduction in the use of environmental space to sustainable levels, or a concern about the unequal use of environmental space, necessarily implies that environmental space must or should be redistributed on an equal per capita basis is very much open to debate.<sup>4</sup> Van Driel challenges the view that each world citizen should use an equal amount of environmental resources, given the differences between countries in the level and structure of their economies, the state of technology used in their industries, and differences in climate, urgency of needs, history, culture, productivity and the availability of natural resources. He takes the view that defining global environmental space is only relevant for truly global environmental problems (such as global warming), but that "... also on a global level, justice and sustainability need to be separated". The achievement of sustainability and the distribution of environmental space are two different things, and the latter "does not seem to be the central problem" (Van Driel, 1993, pp. 169, 170).

Van Driel's is an extreme position, and rather out of line with the predominant view that addressing environmental justice issues is important, if not a pre-condition, for the achievement of global sustainability. However, what it makes clear is that what is a 'just' distribution of environmental space can be based on a range of principles that may not be mutually compatible (such as receiving income according to effort, achievement or need). Although the purpose of this paper is not to discuss theories of justice, it should be pointed out that there are divergent views on what justice entails, and that there is scope for arguing that a just allocation of environmental space does not necessarily imply an equal, or even per capita allocation (Atfield & Wilkins, 1992; Sen, 1992). Getting agreement on what environmental justice means, as a basis for (re-) allocating environmental space, at the national and international level, is a formidable challenge.

*Implementation Issues*

A third category of issues that need to be addressed if the concept of environmental space is to be used as a basis for operationalizing the principle of sustainability comprises those associated with implementation. Assuming that the interpretative and ethical issues referred to earlier can be resolved, and that the concept is adopted by decision makers, (how) can it be implemented?

How the concept of environmental space is implemented depends largely on the institutional framework within which it is given shape. The three frameworks discussed in the following section (legal, economic and policy), offer different options and means for implementation, such as human rights, property rights and green plans. All of these are 'proven' mechanisms that have already gained widespread currency, and therefore can be considered realistic options

for putting the notion of environmental space into practice. However, instruments are likely to differ on a range of points, such as their potential effectiveness, costs, political and social (ethical) acceptability and practicality. These criteria may apply differentially to the national and international (global) level.

It should be emphasized that implementation is not simply a *post hoc* process following the design of a scheme or policy. For schemes, programmes and policies to work, implementation issues need to be addressed in the design process itself. Considerations regarding (the distribution of) costs, acceptability and practicality, often influence the selection and design of a particular scheme, framework or policy. A design that seems more workable, economic, and effective may stand a better chance of being adopted than one that is lacking in these respects. Whether a proposal or scheme has (or is perceived to have) such qualities depends very much on who participates in the process of design, and on the views and interests of those who are involved.

As may be apparent from this discussion of issues regarding the institutionalization of the concept of environmental space, the issues do not necessarily point towards one particular form of institutional design. In the next section, three possible ways to shape the concept of environmental space will be looked at and assessed on how they (potentially) deal with the issues raised. These approaches are based on the most common and prevailing, and legitimate, institutional mechanisms of social choice around the world today: the law, economics, and policy.

### **Shaping Environmental Space Based on Law, Economics and Policy**

Before describing how the concept of environmental space could be given shape in law, economics and policy, it must be emphasized that these three options are not mutually exclusive, or necessarily the only possibilities. Although decisions or activities may appear to be located primarily within one of these realms, these frameworks do in fact overlap, are often mutually supportive or require one another, and do not function in isolation from each other. Consequently, an institutional design for the concept of environmental space may well be a hybrid of elements from each of these spheres, and, for that matter, be more realistic and effective than a design based predominantly on only one of these frameworks.

Yet, as each of these spheres is based on different premises, and activities and decisions within each are based on different rationales, designs can be dissimilar, and even be in conflict with each other. As indicated in the previous section, a design for environmental space will be influenced very much by the meaning or meaningfulness assigned to the concept of environmental space. Some people may look at the right of each individual to environmental space as fundamental, and would object to the idea that people can trade-off their fair share of resources. For others, the notion of environmental space may be primarily a pragmatic tool, an indicator against which progress towards a sustainable world can be measured. Depending on the meaning and significance assigned to environmental space, the institutional frameworks on which designs can be based may be seen as more or less appropriate. Therefore, despite the overlap between the legal, economic and policy spheres, it is important to assess the merits of designs based chiefly on each of these realms.

*Environmental Space as Rights and Obligations*

As already mentioned, the notion of environmental space can be assigned fundamental importance by interpreting it as a basic human right. The right to environmental space can be equated with the very right to exist: without access to the resources and other values that are vital for meeting people's basic needs, people are not able to live, or live a life considered worth living. This is recognized in international legislation directed at the promotion of economic, social and cultural rights, including the right to work, the right to social security, and the right to an adequate standard of living (sometimes referred to as 'second generation' human rights) (Dixon, 1993).

As rights to environmental space aim to go further than securing minimal living conditions (but imply a right to an equal or fair share of resources and a good quality of life) they can be considered to be part of the call for a third generation of human rights which, among other, encompass the right to (sustainable) development and the right to a protected environment (Dixon, 1993). The Rio Declaration can be seen as a framework for the progressive development of such rights (Hossain, 1995). In 1994, a Draft Declaration of Principles on Human Rights and the Environment was drawn up as part of an effort to get the United Nations to adopt an official convention that safeguards environmental human rights (Sachs, 1996). By the end of the 20th century, nearly 60 countries had included environmental rights in their constitutions (Bosselmann, 2001).

At first glance, legal institutionalization of the environmental space concept does not seem overly problematic in terms of interpretative issues. The law can define environmental space as rights to a range of tangible resources, as well as describe it in terms of ethical principles or values. Even though there may not be complete clarity or agreement over what these rights or principles mean, this can be left to the courts to provide and decide.

However, in order to give consequence to the idea of concrete limits that is inherent to the concept of environmental space, environmental rights would have to specify maximum as well as minimum levels. If rights were to be defined only in terms of minima, no one (not even those who use far more than a fair share of resources, however defined) would be obliged to reduce resource use, and thus not trigger off a reduction in the use of resources. Concomitantly, there is a need for formulating legal environmental duties or obligations (to limit or reduce the use of resources to specified levels) as well as rights if environmental overuse is to be eliminated.

How can, or should, the law deal with the issue of environmental justice that is inherent to the notion of environmental space? As noted above, different theories of justice involve the use of different principles or criteria, and may lead to different conclusions, with regard to what is a fair distribution of resources. Essentially, this implies that the issue of distributional justice, and the formulation of legal rights and obligations, cannot be resolved by legal means, but needs to be addressed in the political realm.

To some extent, however, the legalization of environmental space inevitably involves entrusting legal actors with the power to determine what environmental justice entails. Given the scope (and need) for interpretation of the law, in particular with regard to rights and obligations of a qualitative nature, the courts play an important (if not decisive) role in determining what environmental justice effectively means. Thus, when it comes to the implementation of legal

rights to environmental space, a key role is played by judges and other lawyers, a rather small, un-elected, and not necessarily representative, section of a country's, or the world's, population. Although the independence of judges can be seen as a strength in this matter (as supposedly they are not subject to the exercise of raw political power), this is no guarantee that their decisions will be widely accepted as fair or just. In addition, given the often high costs of litigation and the differences in income and wealth between people and organizations, this social choice mechanism does not provide a 'level playing field' for resolving conflicts, and therefore may be seen as less desirable from the point of view of those who advocate (greater) equity.

Therefore, even if environmental space legislation were to be enshrined in supreme law, there is no guarantee that rights and obligations would be fulfilled. Another reason for this is that 'second and third generation' human rights require positive action and the commitment of resources. It is one thing to pass lofty rights legislation, but another to ensure that these rights are effectively realized. To give consequence to these rights considerable funding may be required (for instance, to clean up pollution), and this assumes capability and political will. This assumption is probably even more problematic for poor countries than it is for rich countries.

Given these difficulties, finding a balance between what is just and practicable is a major challenge. For legal rights to environmental space to be meaningful in practice, they need to be able to be realistically enforced and fulfilled. Rights can be given clout by incorporating them into constitutions or legislation of a higher order than normal legislation, so that these rights can be used to litigate against (and strike down) non-conforming legislation. However, given the potentially high (societal) costs arising from these options, governments can be deterred from giving rights legislation such a status.<sup>5</sup> On the other hand, if rights legislation is not given superior status, and/or made subject to enforcement processes, it runs the risk of being perceived, and of becoming, of merely symbolic significance.

At the international level, the implementation of second and third generation human rights is even more problematic, as it is further complicated by economic and socio-cultural differences, and the sensitivity of governments to outside interference with their right to determine their own policies and priorities. Rights in these categories therefore tend to be more of a moral than a strictly legal nature, and are consequently less rigorously enforced. They also offer very limited or no opportunities for individual recourse or claims (Dixon, 1993).

In summary, the creation of environmental rights and obligations to institutionalize environmental space may provide a significant boost to the formal status and importance of the notion of environmental space, but is no guarantee that this will be of any practical consequence. At best, rights provide a basis for legitimating actions, initiated by individuals, organizations and sometimes governments, directed at promoting positive changes in human living conditions. At worst, they are nothing more than props for legitimating a political regime. In between, they are expressions of symbolic value that invoke variable degrees of commitment. It is unlikely, however, that, on their own, formal rights to environmental space will bring about a more equitable distribution or access to resources or a reduction of environmental space overuse. To bring that about, something more, or else, is needed, possibly along the lines of measures and

actions associated with the other two options for institutionalizing environmental space.

*Environmental Space as Assets and Liabilities: An Economic Approach*

In line with the intention behind the introduction of the concept of environmental space (to make the principle of sustainability concrete), the main components or elements of environmental space identified are mostly tangible resources (such as land, water, forests/timber, oil, coal and gas, metals and other raw materials). Most of these resources can be bought and sold, and are traded in markets. Trade in some resources, such as water and air, arouses controversy and is much less common, but increasing. Resources threatened by depletion could be made subject to a regime of auctionable 'depletion quotas' (Daly & Cobb, 1989). The extent to which resources are traded, and the price paid for them, is largely determined by market forces (demand and supply), but is also subject to degrees of government control.

Left to their own, market forces are unlikely to respect environmental limits. Indeed, it can be argued that unfettered markets inevitably destroy the very fabric of societies and the environment, as people, human relations and nature are merely treated as means rather than ends (Polanyi, 1944/1957). A root cause of the environmental problematique can be identified in the growing independence of economic decision making from social and political considerations, stronger, in the subjection of politics and social values, and of life itself, to the 'free market' and 'economic imperatives'. From a social and environmental point of view, perhaps the most important questions are whether and how economic institutions can be transformed and brought into line with social and environmental 'imperatives'.

This challenge has provoked a range of different lines of thinking and responses, for instance, in the field of ecological economics, the property rights approach, the advocacy of economic instruments, and promotion of economic democracy. Although none of these ideas has as yet gained the upper hand, there has been a growing interest from governments in the application of economic instruments and, to a lesser extent, the creation of property rights regimes, to address environmental problems. The main factor behind this move is the claimed higher cost-effectiveness of such approaches compared to other forms of government intervention that are often pejoratively labelled 'command and control' (Eckersley, 1995).

This potential is also acknowledged by the proponents of the environmental space concept, who mention regulatory taxes, ecological tax reforms and transferable quota systems as "measures that generally work in the direction of sustainability" (Buitenkamp *et al.*, 1992/1993, p. 144; Friends of the Earth, 1995, pp. 151; 179–181; Carley & Spapens, 1998, pp. 181–184). As environmental space is described in terms of mostly tangible and quantifiable resources, which already (or potentially) have economic value, it can be defined rather easily as a range of assets and liabilities from an economic perspective. Resources used (or the effects thereof) within (pre-determined) permissible limits can be treated as assets, whereas resources used (or effects thereof) beyond such limits can be seen as liabilities. From this perspective environmental space (resources, waste absorption capacity) is interpreted primarily as a set of economic goods, and environmental space overuse is treated as an economic liability.

The treatment of most natural resources as economic assets does not generally arouse much disquiet (perhaps with the exception of water, judging from the considerable opposition generated against water privatization schemes), and many are indeed traded. Many people may find it desirable that some price (or tax) is charged for resources that are wasted, and overused, and that have so far been free (such as water), or that have been given away for profit making purposes to private interests (if no rentals are paid for exploiting mineral deposits, for instance). In many cases, therefore, interpreting environmental values as assets is commonly regarded as acceptable or even desirable.

However, interpreting environmental values as economic goods (or 'bads') has raised objections. For instance, the use of economic instruments has been condemned as they can be seen as sanctioning inherently bad activities (granting the 'right to pollute'), and therefore as immoral (Kelman, 1981). Other objections to the use of economic instruments relate to difficulties in respect of dealing with qualitative or social limits. Treating environmental values as economic assets has been opposed in cases where it is seen as not desirable or feasible to put a price on what are seen as essentially priceless (invaluable) things, such as the last specimen of a species, human life, health and well-being, nature conservation areas or values (in general), splendid scenery (which, ironically, is sometimes referred to as the 'one-million-dollar view'), societal cohesion and solidarity and environmental justice. Many of the values referred to as 'priceless' are not normally labelled resources (although it has become common to call people 'human resources'). For most people (at least in Western cultures), these values are not in the same category as energy resources, minerals, land, and even water.

Treating environmental space as a collection of assets (and overuse as liabilities) is compatible with a range of views on environmental justice, from those that involve a defence of existing inequalities to those that imply a radical redistribution and equality. Taxes on the use of resources may weigh disproportionately on those with lower incomes, and thus have regressive effects. However, such effects can be compensated for with other tax reforms (such as lower, or even negative, income taxes on low incomes). Taxes can also be imposed on the capital or property associated with environmentally damaging activities, in which case its effect is likely to be progressive (as property ownership tends to be even less equitable than the distribution of income). Similarly, tradable property rights schemes can maintain existing inequalities in ownership and access to resources if allocated to existing resource users, and increase inequality if further trading leads to a concentration of rights into fewer hands. At least in theory, they can also be used to bring about a redistribution of wealth. For instance, a scheme involving tradable CO<sub>2</sub> emission permits based on such a per capita allocation could bring about a significant shift in wealth from developed to developing countries (Agarwal & Narain, 1991; Bührs, 1996a).

Theoretically, a global taxation scheme could also be designed based on the amount of environmental space used by countries (or on the relative size of their ecological footprint). Countries using more than their fair share (however determined) would pay into a fund (in proportion to the size of their excess) and countries using less than their fair share would draw income from the same fund (in inverse proportion to their ecological footprint). This could be seen as a variation on an idea put forward by Thomas Paine in 1796 who, on the (liberal) grounds that all people have the right to an equal share of nature, advocated

that all land owners pay a rent to a collective fund from which every member of the population would receive an equal share (basic income) (Davidson, 1995).

In summary, treating environmental space as economic assets and liabilities is technically feasible, and politically compatible with a range of views on environmental justice, from conservative to radical. However, treating environmental space only as assets or liabilities is problematic, as not all elements of that space can be quantified, bought or sold, and/or as it is seen as ethically unacceptable to do so. Moreover, re-allocating environmental space on a more equitable (or even per capita) basis, as advocated by many of its supporters, is likely to stumble upon strong opposition from those who stand to lose, including the rich and powerful, and the corporations on which much of their wealth and power is based. By contrast, schemes that are likely to maintain, or even increase inequality, are more likely to receive the political support needed for their adoption and implementation.

### *Environmental Space as Policy Objectives: Green Planning*

Transforming the notion of environmental space into policy objectives, and more specifically into 'green plans', is probably the most common of the three institutionalization options discussed in this paper. Already, an increasing number of countries have introduced a form of green planning that involves the adoption of the principle of sustainability in association with the recognition of limits in one way or another (Johnson, 1995; Dalal-Clayton, 1996; Bührs, 1996b; Jänicke & Jörgens, 1998).

Green plans, sometimes also referred to as national environmental action plans or national environmental strategies, are comprehensive environmental policies based on a recognition of the linkages between environmental issues, and of their ecological, social and economic dimensions. Recognizing the shortcomings and limitations of *ad hoc* and fragmented environmental policy development that has been so prevalent until recently, green planning aspires to taking a broad and integrated approach to environmental management. The Netherlands and Canada have been referred to as early leaders in this area, and as offering hope and promise that environmental policy is entering a higher and more effective stage (Johnson, 1995).

Although green planning approaches can take different forms, they usually do include the formulation of specific policy objectives for the long term. In their most ambitious form, they encompass the adoption of goals and targets that are expected to establish the conditions for a sustainable society within the time-span of a generation (Second Chamber of the States General, 1989). Goals and targets are derived from an assessment of the levels of resource use, emissions and waste generation that are considered to be environmentally sustainable, and specify the extent of reductions that must be reached to achieve those levels. Therefore, the interpretation of sustainability in green planning approaches can be similar to that underlying the notion of environmental space.

A significant difference between green planning and an approach based on the concept of environmental space is that the former focuses on what appears to be environmentally sustainable (in terms of local conditions) in a country in isolation from other countries, and does not take into account or address the environmental implications (or ecological footprint) of a country's practices beyond its borders. For example, the first Dutch plan virtually ignored the

international distribution of environmental space, and seemed to suggest that sustainability can be achieved by the Netherlands in isolation from other countries, within one generation. The targets formulated in the plan were not based on an assessment of environmental limits or space in the world as a whole, or of what is a 'fair share' in the global context. Although in subsequent plans the international aspects of the challenge towards sustainable development have been recognized, these have not led to an adjustment of the targets. The Canadian Green Plan drew attention to the international dimension of environmental policy, but discussed this especially in terms of Canada's environmental vulnerability to the actions of other nations and their effects rather than with regard to Canada's own ecological footprint (Dalal-Clayton, 1996).

Many green plans fall short of formulating clear and firm objectives and targets, and are rather non-committal (Jänicke & Jörgens, 1998). They usually incorporate objectives of a general and qualitative nature, or formulate problems, principles and processes in general terms rather than objectives. Although the Dutch green plan contains specific objectives and targets, these tend to focus on reducing the effects of resource use (forms of pollution) rather than on a reduction of the use of resources themselves, or on the achievement of goals associated with community values or the 'quality of life' in a broader sense than the absence or reduction of pollution. More recently, plans adopted in the Netherlands and the UK focus strongly on 'quality of life' issues, but contain few specific objectives or firm commitments in this area (Department of the Environment, Transport and the Regions, 1999; VROM, 2001).

Environmental justice issues have not received a great deal of attention in green plans. For instance, although the Dutch plan recognizes the need to take into account the ability of target groups to meet specified objectives (Tweede Kamer der Staten Generaal, 1993), it does not elaborate on matters of equity, and does not present an agenda for the redistribution of environmental space. Overall, green planning efforts so far seem to largely ignore issues of equity and environmental justice, both at the national and at the international level. However, that does not imply that such issues cannot be incorporated into green planning, and it has been noted that one of the dilemmas facing green plan development is the need to consider "how to tackle controversial and uncertain boundary issues (for example, 'ecological footprints' and 'environmental space')" (Dalal-Clayton, 1996, p. 5).

It is doubtful whether green plans can succeed without addressing environmental justice issues. Their potential for successful implementation is affected by the extent to which such plans are 'carried' by the people who are supposed to put them to work. It appears that many green plan exercises involve some degree of public participation and consultation, but practice in this respect has been limited or restrictive (Dalal-Clayton, 1996; Jänicke & Jörgens, 1998). There are few, if any, indications that public participation has been of such an extent and nature that ('target') populations have 'bought into', or see themselves as the 'co-owners' of, green plans.

For the time being, it remains an open question whether the arrival of green planning represents a genuine new stage in the development of environmental policy (Johnson, 1995), or a new generation in symbolic environmental policy development (Bührs, 1996b). In some countries, such as Canada and Australia, green planning seems more dead than alive (Bührs, 2000). Its promise may still come true, but this depends foremost on the political will, and on whether its

(public and institutional) support basis will grow in strength. Despite its promise and potential, there still is considerable scepticism and reluctance, if not straight opposition, towards green planning, notably in neo-liberal circles, where it is perceived as heavy-handed government interference with 'free markets'. Whereas, ironically, green planning can actually serve, and be subservient to, economic 'imperatives' (Bührs & Bartlett, 1997; Bührs, 2002).

Internationally, for green planning to become a principal means towards operationalizing the notion of environmental space, significant co-ordination effort will be required, perhaps even in the form of some kind of international or global green plan. At this stage, this seems rather idealistic, although Agenda 21, adopted in Rio in 1992 can be seen as an incipient global green plan. In some respects, the establishment of international regimes for ozone depleting substances and greenhouse gas emissions can be seen as precursors of international green planning, as both are based on a recognition of environmental limits, and involve an allocation of space to (groups of) countries in the form of targets. Such developments could provide a basis, and a learning experience, for the development of more comprehensive forms of international green planning in the future.

Arguably, as green planning has become a widespread practice, it offers, of the three options discussed here, the most realistic basis for the institutionalization of environmental space. However, although green planning, as the notion of environmental space, aims at making sustainability concrete, it does so in a rather narrow way. Even in the best cases, green plans deal poorly, if at all, with the global dimension of environmental space, with its qualitative aspects, and with the issue of environmental justice. Like the other two options for institutionalizing environmental space, green planning can serve different political ends, and does not necessarily bring about a reduction of overuse or inequity. It seems that none of the options discussed here offers any strong prospects for the institutionalization of environmental space, at least not envisaged in the (radical) form supported by its advocates. This raises the question of what political future the concept really has.

### **The Politics of Environmental Space**

In the Introduction, it was mentioned that the intention behind the promotion of the concept of environmental space is to make concrete what sustainability means. It is argued that as the principle of sustainability, now adopted worldwide, is interpreted in so many different ways, it threatens to become meaningless. However, instead of throwing the concept out altogether, as advocated by some, the proponents of the environmental space concept try (once more) to assign it a meaning that can be understood and agreed upon by all.

As noted, the proposed way to make the principle of sustainability concrete rests on two assumptions. First, that (largely quantitative) limits to what the environment can sustain (globally and regionally) can be identified. Second, that to achieve a sustainable world it is necessary to distribute environmental space equally among all people.

Both assumptions are politically problematic. The political acceptance of concrete limits is difficult not so much for reasons associated with inadequate data and uncertainty, but because it reduces the room for political manoeuvring and bargaining. Introducing limits based on the recognition that growth is no

longer possible means a return to the 'politics of scarcity', a situation in which one person's gain implies someone else's losses (a 'zero-sum' situation). Decision making in such a situation is likely to become more adversarial and difficult, and requires a greater degree of (self-imposed) constraint and discipline to prevent societies tearing themselves apart (Ophuls & Boyan, 1992).

The (public) secret of the popularity of the concept of sustainability lies in its very vagueness and non-specificity, which enables governments and businesses to mould it to suit their own purposes. Making sustainability concrete may not be very welcome in many quarters, as it is the very flexibility of the concept that allows governments and businesses to get on with the job and camouflage non-sustainable policies and practices.

Accepting limits may be a lot more politically acceptable if it can be plausibly demonstrated that environmental gains and continued economic growth can be achieved simultaneously (be it temporarily) largely via technical measures.<sup>6</sup> A strategy that emphasizes the role of efficiency gains and the positive role to be played by technological innovation and industrial modernization therefore may offer the best prospect for overcoming, at least in the short term, the political obstacles to accepting limits as a basis for (environmental) policy (or green planning). Such a course buys time, and may allow for limits to be institutionalized in the form of environmental rights. An economic scheme that emphasizes the scope for allocating resources more efficiently (even if not more equitably), within identified limits, may be a next (moderate) step towards strengthening the institutional framework for underpinning environmental space. It is likely that, if the notion of environmental space will be institutionalized, this will occur via a staged and gradual process.

However, even if the notion of limits can be made politically acceptable by emphasizing the technical means by which the use of environmental space can be reduced, there is no guarantee that it will also be accepted that environmental space needs to be allocated equitably (let alone equally). The Brundtland report attached priority to improving the lot of the deprived, but suggested economic growth, not redistribution or economic reform, as the principal means towards that goal, and sheds no light on the causes of poverty and inequity (Wackernagel & Rees, 1996).

But if efficiency gains (and/or 'ecological modernization') occur primarily in developed countries and are not accompanied by a redistribution (of gains or space) in favour of the poor in developing countries, they will increase inequality. This seems to be borne out in practice. Even though developing countries appear to be improving their place on the human development index (UNEP, 2002), the level of economic inequality has risen, between and within nations.<sup>7</sup> A contributing factor has been the introduction of neo-liberal policies of 'structural adjustment', often forced upon countries by international institutions.

Whether the concept of environmental space, including the issue of environmental justice, will be adopted as a basis for operationalizing the principle of sustainability, and in what (institutional) form, depends foremost on the question of agency. On its own, the concept will not change the world. To have any impact, it requires a social and political basis. So far, the voices calling for environmental space to be instituted as a guiding principle have been few and far in between, and rather muted. Yet, in recent years, the call for social and environmental justice has gathered considerable momentum, especially in the

form of the global justice movement (often wrongly referred to as the anti-globalization movement). As this movement is developing positive and practical courses of action for advancing sustainability, it is quite possible that we will see a growing interest in, and support for, the concept of environmental space.

## Conclusion

The concept of environmental space has been put forward as a means for 'making concrete' what sustainability means, and to provide clear guidance towards its achievement. Based largely on a quantitative assessment of environmental limits, and on the assumption that all people on earth have the right to an equal share of environmental space, it indicates by how much resource use, or the effects thereof, should be reduced (in the case of industrialized countries), or (in the case of developing countries) how much scope there is for resource use to be increased. Thus, it specifies in concrete terms what is ecologically necessary and socially and environmentally just, makes explicit to what extent prevailing policies fall short of what is required, and exposes the scale of environmental injustice.

Although in some countries there has been a growing interest in this interpretation of sustainability, there are several issues that make its widespread adoption and implementation by governments problematic. These issues relate to the rather narrow interpretation of sustainability (mainly in terms of resources and the pollution effects of their use), the radical view of environmental justice associated with the approach (which can be challenged on several grounds, and is likely to arouse fierce opposition), and questions related to how the use of environmental space can be practically and effectively allocated, redistributed and reduced (issues related to design and implementation).

Here, three (potential) ways of institutionalizing environmental space have been discussed and assessed on how they (potentially) deal with these issues: the institutionalization of environmental space in law (rights and obligations), its embodiment in economic assets and liabilities, and its transformation into policy (in particular, green plans). The three approaches score differently on their capability to deal with the issues: have strengths as well as weaknesses, advantages and disadvantages, with respect to the issues and criteria discussed. None appears to be superior or more attractive on all fronts. In addition, all three options face considerable political obstacles to their adoption, and/or to their meaningful implementation, in the sense that environmental space is more justly distributed and its use effectively reduced, at the national as well as global level.

Consequently, it seems that the prospect of the notion of environmental space becoming a dominant or preferred mechanism for 'making sustainability concrete' are slim. Arguably, its best chances of moving in that direction lie in a strategy of sequencing and blending, adapted to national and international conditions and opportunities. In some countries, institutionalizing environmental space in law may be more feasible than its development in policy (green planning), but the introduction of one approach may provide a basis for broadening and strengthening its basis. The most desirable and effective way to institutionalize environmental space is likely to be a design that integrates elements of all three social choice mechanisms, and that combines the moral power of the law and a recognition of the rights of individuals, with a regard for

economic interests and efficiency, and a recognition of the importance of collective interests and community values.

However, the greatest challenge to the adoption of the concept of environmental space as a means for clarifying and operationalizing sustainability lies not in how it can or should be institutionally designed, but in the political interests associated with a sustainability concept that is broad, vague and flexible, and that allows governments and businesses to 'get on with the job' and camouflage policies and practices that are not sustainable. Moreover, as the concept of environmental space exposes the scale of environmental injustice in the world, and explicitly advocates a (radical) redistribution of space, it will probably invoke the opposition of vested interests and those who benefit most from the existing distribution.

However, if environmental space continues to decline, and the extent to which environmental limits are exceeded becomes more and more apparent, it is likely that the need to achieve concrete reductions in resource use and/or their effects, and to achieve a fairer distribution of environmental space (to avoid serious conflict and social and political disintegration), will gain in political support and priority. The principal importance of the concept of environmental space may be that it prepares people mentally for the time to come and provides a basis for the development and introduction of a response that is both practical and morally appealing.

## Notes

1. The notion of environmental space overlaps to some extent with those of 'carrying capacity' and 'ecological footprint'. However, the former is commonly defined on a regional basis, and usually is associated with the assumption that people should live mostly or even exclusively from the resources available in that region. As, in the present world, this seems highly unrealistic, the concept of carrying capacity does not provide a strong basis for policy development. The notions of environmental space and ecological footprint are very similar in what they demonstrate (the imprint of a population on the global ecology), and raise the same kind of questions (regarding equity, re-allocation). However, they rely on different methodologies. The concept of ecological footprint, by aggregating resource use with the help of a single denominator (productive land) is particularly helpful for educational purposes directed at calculating and comparing a population's overall environmental demands. It is less suitable for developing specific targets and policies than the concept of environmental space, which is assessed on the basis of specific resources and (pollution) issues.
2. In the report, the definition of sustainability is said to contain two concepts: the concept of 'needs', and "the idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet present and future needs." (World Commission on Environment and Development, 1987, p. 43).
3. For an historical account of how resource overuse has brought about the decline of societies, see Carter & Dale (1955/1974), Pointing (1991, Chapter One).
4. A complicating factor in this context is that calculations of available environmental space based on the existing situation do not take account of historical inequalities (Hanson, 1999).
5. An example is provided by the human rights legislation adopted in New Zealand in 1993, which is not binding on the government itself, given the huge task and costs involved in ensuring the consistency of other legislation (The Press, 'Human Rights Law Jam', Editorial, 20 August 1997, p. 11).
6. For Europe, it is thought that a reduction of material intensity of a factor 10 (on average) is required and not impossible (Friends of the Earth, 1995; Weizsäcker *et al.*, 1997; Hawken *et al.*, 1999).
7. "The average income in the richest 20 countries is now 37 times that in the poorest 20. This ratio has doubled in the past 40 years, mainly because of lack of growth in the poorest countries" (The World Bank, 2003, p. 2).

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