

COSTING THE EARTH

*The Challenge for Governments,
the Opportunities for Business*

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drug companies are not likely to use for long a plant that must be collected from the wild. Supplies are likely to be too erratic. Instead, they usually either cultivate the plant nearer home (which means in the developed world) or synthesize it. Either way, the plant's native country loses income.

Of all the ways in which nature makes possible those economic activities that are more readily measurable, none is more important than its role in regulating the planet's life support system. Plants and plankton help recycle oxygen, absorb carbon dioxide, and regulate rainfall. Individual countries may make this possible by the way they preserve their natural resources; all humanity gains.

However refined the methods by which economists value the environment, politicians and businesses may take more notice of cash payments than the value people say they derive from this or that aspect of environmentalism. One of the great dilemmas of the coming years will be to find ways of rewarding poor countries for their contribution to the public good. There may be no mechanism that enables those who want to protect a resource to compensate those who want to destroy it.

A Premium for Insurance

One complication in setting environmental benefit against the costs of taking action is the difficulty of proving what will happen if nothing is done. Because environmental science is an uncertain art, most policy decisions involve a weighting for risk. If sulphur dioxide from coal-burning power stations were undoubtedly the cause of acid rain, then the decision to install scrubbers would be a (relatively) simple matter of balancing their cost against the value people place on forests. But there are probably several causes, including nitrogen oxides from car exhausts, and disentangling the main culprit will take time. In the meantime, governments have to decide whether to compel power stations to cut sulphur-dioxide output now or to wait for harder proof. If power stations are indeed the problem, then the sooner governments take action, the less it will

cost; if they are not, then governments waste money by making electricity more expensive than gas.

The difficulty of making such decisions is compounded where the consequences of inactivity are likely to be irreversible. Clean the sewage out of a river and the fish will come back; stop homes from burning coal and air quality will improve. Many important environmental improvements of this very sort have occurred in the past few decades. But once the rhino is extinct, no earthly power can reinvent it; once the Amazon forest has gone, it probably can never be replanted; once the world has warmed up, we will have to wait for the next ice age to cool it again; and once genetically engineered organisms have escaped, they may never be recaptured. The problems that most preoccupy environmentalists are precisely the irreversible sort. The stakes are highest, and often the costs of correction are highest, too.

Politicians frequently turn to scientists to help them measure environmental damage. But scientists will not necessarily agree with one another—any more than economists. Establishing scientific proof of environmental damage is much harder than, say, finding a link between a falling apple and the force of gravity or even cigarette smoking and lung cancer. Environmental damage may occur far from the original cause. Acid rain in Norway may be caused by British coal-fired power stations or by German cars. It may take place long after the original event, too late for preventive action. Nitrates in the water supply may come from spreading nitrogen fertilizers today or from ploughing grassland 20 years ago. By the time we know for sure how the greenhouse effect will warm the earth, large amounts of warming gases will already have built up in the atmosphere. The only option for politicians who want to be environmentalists may be to pick their scientists and bet voters' money on the pet view.

To deal with the problems of risk and irreversibility, some governments have adopted the "precautionary principle," the precept that it may sometimes be wise to take action before scientific knowledge is sufficiently advanced to justify it. The British government tried to spell out what that meant in its environmental policy paper of September 1990. The paragraph proved the hardest one to draft in the entire lengthy document.

In the end, it set out a concept against which the government had previously fought tooth and nail:

Where the state of our planet is at stake, the risks can be so high, and the costs of corrective action so great, that prevention is better and cheaper than cure. Where there are significant risks of damage to the environment, the government will be prepared to take precautionary action to limit the use of potentially dangerous pollutants, even where scientific knowledge is not conclusive, if the balance of likely costs and benefits justifies it.

Gauging Benefit

One reason for trying to set environmental benefits against the costs of taking action is to make sure the public realizes the price it is paying for a particular gain. Governments may often be tempted—or lobbied—to pursue policies that will bring little environmental benefit, at huge expense. This is particularly true of policies whose immediate costs fall on companies in industrial countries. Companies, after all, may lobby, but they do not vote.

One of the oddities of human behavior that has played a large part in determining environmental policy is an apparently irrational attitude toward risk. Although people in rich countries live longer than ever, they are more fearful than their ancestors were about the world about them. One reason may be nervousness about new technology. Another is mistrust of scientists, who have too often claimed that a process or substance is safe and then changed their minds. Familiar risks are less frightening than the unfamiliar; visible risks less scary than the invisible sort. People clearly feel more frightened by the remote risk of a large catastrophe than by the greater risk of an equivalent number of deaths spread out over a long period. Hence the greater fear of nuclear power stations than coal-mining fatalities, and of aircraft crashes than road accidents. People feel more frightened by risks over which they feel they have no control than by those they inflict on themselves. Hence the greater desire for regulation of