for example, 'An unnatural disaster', *The Guardian*, 8th January, 2004). Nevertheless, '. . . significant progress has been made in abating acid rain, although much still needs to be done. And major efforts are under way to stem deforestation and to address the tsunami of extinction' (Lovejoy, 2002). Lovejoy adds the rider '. . . but it is crucial to remember that whereas deforestation and acid rain are theoretically reversible (although there may be a threshold, past which remedy is impossible), extinction is not'.

CLIMATE CHANGE

Most weeks we read in the press, that climate change is upon us and that matters can only get worse. There is even a 'suspicion abroad' that conditions are worse than we think. Recently, official pronouncements reported in the press added to the concern: they have led to headlines such as: 'End of the World is nigh – it's official'; 'Human race is killing the planet says Meacher'; and 'Risk to the environment poses the same dangers as terror, warns Blair' (*The Guardian*, March 2003). Scientists are, however, more circumspect. As Pearce pointed out as far back as 1989, '. . . there is uncertainty about the nature and effect of these changes to climate. For example, there is uncertainty about the exact trace gas emissions which will enter the atmosphere and the precise fuel mix which will be used in the future. There is also uncertainty about the nature and extent of the ecological changes which will be brought about by pollution; in particular, there is uncertainty about the ways in which the climate will respond, either at a global or in a regional context. There is also uncertainty about environmental thresholds – that is, points at which an environmental catastrophe occurs or where particular processes cannot be reversed. Above all, there is great uncertainty about the ways in which man will respond to any changes to the environment that may occur. Human response to a real or perceived environmental threat may be part of a natural adaptation process and include responses at a personal, institutional or governmental level. The response may range from the small-scale installation in the home of more thermal insulation to a process of mass migration from areas of drought or flooding'. More recently, Schneider (2002) also stressed the uncertainty surrounding the whole vexed question of climate change: 'Uncertainties so infuse the issue of climate change that it is impossible to rule out either mild or catastrophic outcomes'. Temperatures in 2100 may increase by 1.4 degrees Celsius or by 5.8 degrees. The first would mean relatively easy adaptable change: the larger figure would induce very damaging changes. The most creditable international assessment body in this field, The Intergovernmental Panel on Climate Change (IPCC) endorse this range of possibilities so that we could be lucky and see a mild effect or unlucky and get catastrophic outcomes. Since a large body of the scientific community believe that climate change in part is due to human activities, a reasonable behaviour would be for humankind to take preventative measures. As Schneider (2002) points out, 'It is precisely because the responsible scientific community cannot rule out such catastrophic outcomes at a high level of confidence that climate mitigation policies are seriously proposed.' Until the Scientific community, acting on its research findings, advises otherwise, it would seem prudent to

propose development strategies, which reduce, as far as possible, the pressures on a fragile global environment. Here it is intended to continue to advocate 'the precautionary principle' as a guide for environmental design: this principle is fundamental to the theory of sustainable development, which advocates a cautious approach to the use of environmental resources, particularly those which result in the pollution of the atmosphere with greenhouse gases.

SUSTAINABLE DEVELOPMENT

There seems to be widespread agreement that solving global problems means the adoption of policies and programmes that lead to sustainable development. Sustainable development, however, has many different meanings (Pearce, 1989). The shades of meaning given to sustainable development closely mirror – or perhaps match – the writer's intellectual or emotional position along the spectrum of green philosophy. There is also a great danger that the concept will become meaningless, or simply be used as another wordy panacea instead of action for dealing with the environmental ills that befall the planet. The pursuit of a sustainable future for the human race in an environment of quality will require the design of effective policies and programmes which directly address the related problems of unsustainable activities and environmental degradation; they must also be politically acceptable in the jurisdiction where they are proposed. If these policies and programmes are grouped beneath the generic term 'sustainable development', then that term must have a generally accepted meaning which does not reduce it to an anodyne instrument for political obfuscation.

A generally accepted definition of sustainable development, and a good point to begin an exploration of this concept, is taken from the Brundtland Report: 'Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, 1987). This definition contains three key ideas: development, needs, and future generations. According to Blowers (1993), development should not be confused with growth. Growth is a physical or quantitative expansion of the economic system, while development is a qualitative concept: it is concerned with cultural, social and economic progress. The term 'needs' introduces the ideas of distribution of resources: 'meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life' (World Commission on Environment and Development, 1987). These are fine sentiments, but in reality the world's poor are unable to achieve their basic needs of life, while the more affluent effectively pursue their aspirations, many luxuries being defined by such groups as needs. There will naturally be environmental costs if the standards of the wealthy are maintained while at the same time meeting the basic needs of the poor. These environmental costs, furthermore, will increase dramatically if the living conditions in developing countries improve, let alone if the aspiration is to bring those conditions in line with the more affluent developed world. A choice may be inevitable: meeting needs therefore is a political, moral and