

ENVIRONMENT EAST-ENVIRONMENT WEST: CHOICES FOR AN ENVIRONMENT SYLLABUS

[Dr. David Watts](#)

Dean, School of Geography and Earth Resources
University of Hull
United Kingdom

As the world population continues to grow, perhaps hopefully to stabilise some 30 to 40 years from now at a level of circa. 8 to 12 billion it is now somewhat over 5 billion levels of resource use must of necessity be augmented, causing severe strains to those resources, both renewable and non-renewable, which are left on this planet. Yet at the same time, many of those resources, and even renewable resources, appear to be diminished already to their sustainable limits, beyond which their remaining chances of preservation are severely curtailed.

Evidence for this is by now well-known the destruction of forests wholesale, both tropical and extra-tropical; the lowering of water tables on a world scale, leading to a marked diminution of fresh water availability for drinking and/or agriculture, and also to an augmentation of salinisation in ground water in coastal districts; the continued loss of top soil, also world-wide, at ever-increasing rates currently ca. 1000 tons per annum; the oversimplification of food-producing systems through the excessive use of fertilizers and pesticides, leaving them in time, and paradoxically, more vulnerable to pests and diseases than they were to begin with; and so on.

Overall today, there are perhaps five major bios issues which must be recognised and resolved if populations are to survive and prosper, and these are:

1. The establishment and maintenance of a balance between the growing global population and food resource availability, bearing in mind that most land capable of bearing food crops is already used, and further is a relatively small portion of the earth's land surface (ca. 11%);
2. The creation of a balance of wealth and resource use especially between the very rich and the very poor, and notably these days arising out of the increasing global urbanisation, a process which in itself tends to lead to the excessive use of whatever resources are available, both in the immediate urban hinterlands and occasionally much farther afield and detaches the producer from the consumer. As a rider to this latter point, the case of mineral extraction for urban growth is an interesting one: more minerals are taken from the earth to build cities than is lost by man-induced soil removal from land to ocean and that is at enormous levels;
3. Global land degradation problems must be resolved: the annual loss of top soil is enormous, and can only be prevented if people (not only farmers but also traders and distributors) can be convinced that long-term gains in the form of environmental preservation are much more important than short-term gains.
4. The whole process of global environment change arising out of planetary warming needs to be more fully understood: as it is, preliminary results from the Inter-Governmental Panel on Climatic Change (1990) suggest that food production in certain areas will be adversely affected, as in the corn belt of the American Midwest, the Mediterranean, and the Sahel, and that those areas which conversely might benefit will not be able to counteract fully the loss of production this implies.
5. The fifth issue is that world peace must be maintained at all costs, or else all projections no longer apply: there is plenty of historical evidence to confirm the view that hostilities can directly create devastating famine, coupled with a loss of environmental quality as food-producing systems are no longer maintained. Over the world as a whole, Haiti, which went from one of the richest agricultural areas anywhere to a devastated wasteland in about 20 years, from 1791 to 1821, as crop land was abandoned and irrigation canals poured unhindered through gaps in their walls down mountain sides to move top soil during the continued revolution of that period. Added to this agenda must be the realisation that discussions relating to bios and the environment must include dialogue in the non-European context, since many non-European cultures have ideas to offer in respect of environmental management and preservation which we Europeans would do well to heed: as one sociologist has put it: the 'Vasco da Gama' era of 'European' developmental superiority must end, to be replaced by a more complete multi-national and multi-cultural approach, and it is this theme which this paper particularly seeks to address.

Having said this, it must now be admitted straightway that Europeans and Americans over the last 100-120 years, from Darwin onwards, have made major contributions to an understanding of how particular environments function, both at a micro and macro scale, and how they may change over time, and by which processes. By environments here I speak as a biogeographer, and include all those organisms which live within the physical framework of land, water and atmosphere. This is indeed a holistic approach, and one is faced with the difficulty that from time to time many generalisations have to be made. There are also of course many things we do not know yet: even though many species are disappearing fast off the face of this planet, we have to make do with approximations even when we come to list their numbers, nor do we know much about those species, both individually and collectively, may respond, change their habitat, and move as a result of environmental change.

Again, one has to use approximations, listing data at times from historical records, and on other occasions pollen data from sediment cores which reach back into the Pleistocene ice ages and at times beyond. Despite these and other difficulties, I strongly believe that the holistic approach must be incorporated into any curriculum relating to the bio-environment.

Where the European and American approach to the environment falls down in large measure is in linking its condition to other human values, of what one might call a 'spiritual' or a philosophical nature. There are of course many works which deal with the relationships between man's overt activities and the environment; one very influential book, George Perkins Marsh's *Man and Nature*, written over 120 years ago, was surprisingly modern in its ideas of conservation, and, some argue, led to the early establishment of the American National Parks Movement. But the idea that one might be conditioned to look at, analyse and evaluate environment in a particular way, depending on the culture in which one lives, is a much more recent one. In this, man is viewed as having behavior which is some function of his image of the real world, and he is taken to be a complex information processing system. Thus, the real world is taken to be a source of information, which enters the individual through a pattern of perceptual receptors, and the precise meaning of the information is determined by an interaction between the individual's value system and his image of the real world. The meaning of the information is then incorporated into the image. The image may also depend to some extent on restrictions of language, another cultural attribute: thus snow in English may be clear to all, though to an Eskimo it may be decidedly unclear, there being many words in that culture to describe the phenomenon. Similarly, the Japanese have at least 14 words to describe rain, including oame (a big rain), kosame (a small rain), harusame (spring rain), murasame (a steady rain which does not last long but is longer than a squall), and so on.

At least some of our attitudes to the environment and man's use of it are long-standing, going back at least to the Columbus period and before, during the late 1400s. Some are, or were for many years, enshrined in law. The repartimiento-encomienda system of colonial Spain is a good case in point, for although these concepts are now very largely outdated, they lasted for four centuries, and caused much distress through culture clash in Latin America. They originated when Spain began to reconsider virtually all of her old ideas about land division, land settlement, land use and the treatment of captive peoples, as she was recovering land formerly held by the Moors, leading up to the latter's expulsion in 1492. Thus, on mainland Spain, the recovered land was placed under the initial jurisdiction of the Crown, and thus termed realenga. Some of this land subsequently was granted by the Crown to representatives of those who had participated in its recovery, in recompense for services rendered. This meant that a core of trusted settlers could be placed upon it whose task it was to encourage its further peopling and at the same time arrange for its government and defense. Originally a matter of royal privilege and custom, this style of land partitioning in recaptured territory then came to be formalised within the constraints of repartimiento, a legal system which, under the continuing aegis of the Crown, apportioned any 'new' land mainly between the lords of the realm, prelates, particular churches and the leaders of monastic foundations and military orders, but also left some available for more junior militiamenöcaballeros, or horse riders, for instance. Repartimiento accordingly was meant to benefit all social classes. Concurrently, the legal authority in recaptured terrain was granted by the Crown to selected members of the older militia. Such authority has held in trust (encomienda) for the Crown, which also retained ultimate responsibility. This new method of land apportionment effectively ensured that Spain's rulers were able to keep strict control over the use of her newly acquired terrain. The system was then transferred to her new colonies overseas, first in the Canary Islands and then to the West Indies and Latin America. Less interested in land than in gold and silver in the New World, this attitude system and legal system were then bastardised to the extent that Spanish colonizers, with their huge military superiority, were awarded not land, but tribal groups, who then could be utilised as a work force under slave conditions; and this in turn led rapidly to the demise of Indian cultures, and their conservative attitude to the environment, and in large measure to the extinction of the Indian tribes themselves in many parts of the New World.

Rather similar methods were employed by the English during their colonisation of the West Indies over one hundred years later, with the King distributing lands to the court favorites who then tended to sell it at a tidy profit to merchants for development. Where aboriginal populations were encountered (none remained in the West Indies by this time), they tended to be entirely ignored, as in the case of Australia, in which case, despite the clear presence of such groups from the time of landing onwards, the land was officially deemed to be 'empty' by the home government, a decision which has bedeviled white-aborigine relationships ever since. Alternatively, tribal boundaries were replaced by straight administrative-dividing lines on a map, as in much of Africa. The point about such history is not that these decisions were made, but that they have affected western thinking about inter-cultural relationships, and the effect of these on the bios ever since; and only now are they beginning to be broken down. Also now is a growing realisation that legislative activity can affect the well-being of bios positively or negatively, and courses relating to this are now being introduced to curricula, as in the new 'Environment and Earth Resource Management' course which we are commencing at both undergraduate and postgraduate levels in the University of Hull.

At the same time, there are at least two other major paradigm shifts taking place on a worldwide scale, which clearly affect our views of life, life experience and science. One is the general breakdown of dividing lines, established for the most part towards the end of the last century, between areas of study, particularly in the physical and natural sciences, and this is something that bios curricula must take into account and develop further. The second, on a broader scale, is a possibly much larger change, replacing the last generally-agreed major paradigm change to occur in the western world when the medieval age of faith was replaced by a scientific-rational approach, termed the Enlightenment, and which ushered in a dualistic culture separating body from soul and mind from spirit. For several years now, people have become increasingly skeptical of this approach. Even in the 1940s, Sir Alastair Hardy, a zoologist incidentally also from the University of Hull, was putting forward the view that religious or spiritual feeling was an essential biological part of human nature, and should not be suppressed by the customary social taboos of the western world.

Closer to the present day, in a period in which at least 33% of all adults in the U.K. claim to have had some spiritual experience which has changed their lives, and in which also a virtually total separation of man from the natural world has taken place, the argument is that change from the old dominant paradigm is being forced by three major agents: the ecological crisis; the disillusionment with the old concept of 'progress' associated with the Enlightenment; and new scientific notions like relativity, quantum physics and chaos theory. In quantum physics, for example, matter is neither 'solid' nor predictable, and that questions all of our current scientific base and its predilections which separate matter and spirit. Rupert Sheldrake, in his latest book, *The Rebirth of Nature*, argues that the new science has re-introduced indeterminism, spontaneity and creativity into its curriculum, and that in consequence 'mystic, animistic and religious ways of thinking can no longer be kept at bay.' Other approaches such as the Gaia theory have also of course come to the fore, and even though this particular notion is accepted in full by relatively few at the present day, it has played a major role in challenging established concepts of the natural world.

Referring back to the overall theme of this conference, it seems to me that, in establishing a curriculum for the bio-environment, we must take note of these developments and attitudes to bios of those other cultures overrun by western imperialism in the past but from whom we may have much to learn. Those Arawak Indian communities in the West Indies of the pre-Hispanic period, for instance, supported for at least five centuries a population of ca. 6 million with food-producing systems which apparently did not lead to any significant environmental deterioration for the whole of that period and they had a high level of culture and health as well. We know little about Arawak philosophy but it is clear that the maintenance of a good environment was very important to them. Although at a more primitive stage of technological culture than the Arawak, it is likely that Australian aborigines had a highly-evolved sense of the two-way superstructure of man-environment relationships. To them, man and environment were indivisible, and this comes out of their 'Dreaming' legends. W. E. H. Stanner, the white man who has written the best short account of the Dreaming, notes: "It is a cosmogony, an account or theory of how what was created became an orderly system.... how the universe became a moral system. The white man could offer in exchange only the Book of Genesis, but there was never any suggestion that Adam and Eve were aborigines." All told, the aborigines did not damage the country they lived in; they had art, dance and song which gave their life meaning; they had no organised chiefs and therefore no power struggles or wars (although they did have violent fights). Life was not idyllic, especially for women, but it had shape, depth and structure.

A final example relates to Korea. The highly evolved society, like many others in the Orient, has managed over several centuries to keep its roots in the environment in the strongest possible way. Once outside of large cities such as Seoul, the environment is revered, and many scientifically-trained Koreans admit to practicing a modern form of shamanism which places environment at its core. At such important moments during a life span as choosing a place for burial or building a house, the Koreans have always considered nature and its environment, such as the course of a river, the shape of a mountain, or the aspect of a hillside, as being important in their process of choice. There was a set of criteria for choosing the most ideal place, named the *myongdang* (e.g. burial places were often selected with a southeast aspect). Enormous amounts of money were often spent on geomancy to discover the right place, especially for family tombs, by both poor people and up to the highest social class. The result is that such tombs dot the countryside and become an essential part of it. It also means that the environment, being an integral corollary of both life and death, is preserved in good shape throughout the land.

To conclude, it appears very strongly to me to be the case that, in establishing a curriculum on the bio-environment for the millennium, we must take into account not only practical and scientific matters such as how the bio-environment may function, but also a series of supporting concerns, such as legal and management matters and cultural attitudes in the broadest sense. Inputs from cultures and regions other than our own are essential and an inter-cultural meeting of minds is a prerequisite for success.

Dr. **David Watts**, Dean of the School of Earth Resources at the University of Hull, is the founder-editor and chairman, Board of Advisors, of the *Journal of Biogeography*. He is chairman of the First International Congress of Biogeography (1989) and has published articles and books, including: *Man's Influence on the Vegetation of Barbados*, *Principles of Biogeography and Development*, *Culture and Environmental Change in the West Indies*. He is currently a Consultant for the Seeds of Change Program at the Smithsonian Institution, Washington D.C.