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Towards an Authentic Indian Environmentalism

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Abstract

Despite elaborate policies and programmes to deal with them, environmental problems in India are generally worsening. In this paper it is argued that we are not adequately diagnosing these problems. There is a tendency to focus on effects, i.e. on technical definitions and solutions, rather than on causes – which are predominantly social, economic and political. In this we have followed the lead of Western environmentalism. We must first of all, therefore, question this Western perspective. Then we must attempt to articulate an authentic Indian environmentalism. To do this we must take into account the perceptions of all those people in our society who are being marginalised by 'development' and globalisation and their many creative responses to the environmental problems they face. This paper describes some of these responses and reflects upon them.

Introduction

A critical examination of the ways in which environmental problems are described in Indian school textbooks reveals a disturbing lack of relevance to ground realities (Jackson, 2002b). In the first place there is a disproportionate attention given to the concerns of the minority of affluent, powerful urban dwellers, in particular to pollution and wildlife conservation. The environmental problems of rural India are scarcely mentioned, or at least not in terms that are meaningful to rural children and their parents. Second, the textbooks tend to define environmental problems in terms that suggest they can be solved by purely technical means; physical, chemical and biological definitions are offered, but virtually no mention is made of their economic, social and political determinants and consequences. Third, problems tend to be defined on huge scales in terms of children's lived reality – national and global scales – which only adds to the curriculum yet another chunk of meaningless facts to be memorised.

This lack of relevance is seen in all spheres of environmental policy and practice. In this paper it is argued that this results from identifying and defining our environmental problems from the perspective of contemporary Western culture. An attempt must therefore be made to formulate a more authentic Indian environmental perspective. To do this, my argument runs, we must be prepared to question the core assumptions of Western culture as applied to our country and to learn from people in all those segments of our population that are being marginalised by modernisation, 'development' and globalisation. This, I would say, is an urgent task for all postcolonial countries. Taylor and Van Rensburg (2002) and Schreuder *et al.* (2002) have described recent efforts in this direction in South Africa.

What Are the County's Environmental Problems?

It is not my intention to draw up a comprehensive list of India's environmental problems, but rather to highlight, through selected stories, some points of view that are not taken into account by current environmental policy.

First, a question of scale

In attempting to define and describe environmental problems meaningfully the concept of an ecosystem can be useful. In the first instance it should be the local ecosystem, i.e. the traditional village. Larger regional ecosystems, upto and including the global ecosystem, should be of secondary importance on the principle that all environmental problems must primarily be tackled on a local basis if there is to be any possibility of solving them at the regional or global levels.

The rationale for this proposal is that we must relate environmental problems to specific sets of individuals, clearly defined communities, that have, or can acquire, the capacity for dealing effectively with them. A community in which everyone potentially knows everyone else, and a small, distinct geographical area, have been suggested as criteria for defining a locality (Jackson, 2003c). Only if local ecosystem problems are adequately defined over the entire country, will realistic national and global policy options slowly come into focus.

The town and city, while not ecosystems, can be thought of as discrete geographical entities for which it is possible to construct energy, water and material flow models. If cities are too large to qualify as 'local' entities, then in the first instance local neighbourhoods might be appropriate. A fuller understanding of a city is possible when it is viewed as a part of a regional ecosystem (Suman Pande, pers. comm., 2003).

When introducing school children to environmental problems, it is also probably more effective to begin with local problems that are concrete facts of their immediate personal experience, and only when they are older gradually shift the focus to more abstract regional and global problems, taking care to show how the local and the global are related.

A corollary of this ecosystem approach is that the residents of the ecosystem must themselves identify and define the problems they face. If problems are not recognised, or, if recognised but inadequately defined, they are not problems that can be solved. Outsiders' suggestions or directives, even if reasonably correct, may not be understood or accepted.

The question of objectivity in identifying environmental problems

People mention only the problems they perceive, and their perceptions are determined by their special socio-economic group interests and, for educated people, by their school textbooks and the media, rather than by what is actually there. An example from the experience of the Uttarakhand Environmental Education Centre (UEEC), an NGO working in the mountainous region of Uttaranchal state on India's Northern border with China (Tibet), will be instructive in this regard. To help formulate an environmental education course for rural schools, and to prepare teaching materials, workshops of local school teachers and NGO personnel, most of whom were born and reared in the area, were organised. However, it was found that the

participants could think and talk only in terms of pollution, wildlife conservation, deforestation (of government forests), global warming and ozone depletion that feature in the media and existing school textbooks. To get started, therefore, the UEEC staff designed a course focusing on the problems of village land and forest degradation (described briefly in Jackson, 2003c, and more fully in Pande, 2000). Later, these same teachers, now with two to three years experience of the course, were exhilarated to be teaching something relevant to their and their students' everyday immediate life concerns, the only part of the curriculum that does so. Many of them came to realise that their own life experience and knowledge were legitimate, indeed vital. This change in outlook, resulting from a process of transformative learning (Jackson, 2003c), released much enthusiasm and not a little creativity that has enormously enriched the course in its subsequently revised forms.

It was also found with this course that children, exposed only to the standard textbooks (which had already begun to be infused with environmental concerns before the UEEC course began), and who had to help daily at home fetching fodder, fuelwood and water, when asked what use forests are, replied: 'They produce oxygen.' After going through the course their own priorities – fodder, fuelwood, water – were legitimised. The point of all this is that producing oxygen is not adequate motivation to children to work at regenerating their village forest and then actively managing it, but fodder, fuelwood and water are. And at the middle school level (grades 6 to 8, 12 to 14-year-old children) it is not really important that they appreciate the fact that village forests help ameliorate the problem of global warming. Such understanding can come in due course at the high school level.

Perceptions of the affluent

If children and adults have trouble in identifying and defining their real environmental problems, we must look for the influences that are determining their perceptions. We have to ask who writes the ('infused') textbooks children study, and who produces the print media and television programmes that they and their teachers (and all the rest of us) are exposed to? English-medium-educated, upper-income group urban dwellers. And where do they get their environmental knowledge and concerns? From the international media, international symposia and international aid agencies, all of which are dominated by Western thinking.

These observations alert us to the need to understand the viewpoints of people in rural communities in formulating effective environmental policy. It is clear that what the urban environmentalist and policy-maker consider an 'environmental' problem is for them a matter of livelihoods.

Perceptions of rural people

The perceptions of rural people are not, however, uniform. The people of Uttaranchal, for example, like those of rural people in all the so-called 'backward' areas of the country, are aware of the complex of environmental problems of land and forest degradation only to the extent that they perceive that the land can no longer support them. Not only are supplies of essential life-supporting materials (food, fodder, fuelwood and water), which they traditionally procure from their local village ecosystem by their own effort, inadequate, the wherewithal (compost

and water) with which to produce commercial crops is severely limited. Instead of asking why the land does not support them, they come to the classical solution: we must migrate. Throughout all history when a human community degraded its local environment so that its productivity decreased, and/or the community grew too large, people moved elsewhere. In the past there was always virgin land somewhere that could be settled. In the mountainous part of Uttaranchal state this pattern was evident in the 19th century in the establishment of new villages higher up the slopes by refugees from older, valley-bottom villages, and in the 20th century by the migration of men (often without their families) to find jobs outside the state. The cause of this forced migration is conventionally seen by outsiders, and the men who migrate, as economic poverty, i.e. a lack of cash income, while the far more important cause, a lack of life-supporting materials, is perceived only by women whose work it is to procure them. This latter is termed 'ecological poverty' (see Box 1). Because of ecological poverty rural people in degrading ecosystems become 'ecological refugees', or 'ecosystem refugees' in the terminology of Gadgil and Guha (1995). They are transformed into the urban poor, and their presence in such huge numbers in the midst of urban affluence is a pointer, if we can read it, to the most serious of the country's environmental problems.

Box 1. Ecological Poverty

The degradation of village land leads to what has recently been termed 'ecological poverty' (Agarwal, 1998), but which was first described a quarter century ago by Sri Madhava Ashish (1978, 1979). This poverty results from shortages of basic life-supporting materials – food, fuel, fodder and water – and not from a shortage of money. Village people obtain these materials from their own land (both from their own cultivated land and from the community-owned village common land). Many of these materials do not have a money value, except in theory, because they are bulky, perishable and have no practical substitute; water, green fodder, fuelwood and dry-leaf animal bedding material are examples. They are needed daily by every family; if quantities produced fall below minimum requirements, deprivation (i.e. poverty) occurs. The results are poor health and hygiene, excessive workloads for women, and low school enrollment of girl children (Pande, 2001b). In an environment of scarcity of these materials, even a family which has a good money income from paid employment suffers. And no amount of money pumped into rural areas as conventional 'development' or welfare can relieve ecological poverty. It must be tackled directly.

During the colonial period, and even more so during the past half century of 'development', modernisation based on a Western model has captured the imagination of most Indians. At first it was the elite, a class created originally by the British as a strategy for domination, but now the myth of Western-style modernisation has been internalised by even those who are being marginalised and exploited by the social and economic order it has given rise to. The dream of the 'good life' in the city, portrayed by the media, is now every rural child's, and the fondest hope

of his/her parents. Curiously, therefore, the myth of Western-style modernisation reinforces the age-old reflex of environmentally-stressed communities that to survive must migrate. Young people and most older men, because of their greater exposure to education and the media, are writing off traditional village life and livelihoods.

Rural people have come to view education as the only escape from poverty (defined as monetary poverty). And the school curriculum itself fosters this view, for it aims at preparing students for university and careers in government service, business and the professions. Most rural students are not, however, able to compete successfully with students from urban middle and upper classes for university admission. And they have no preparation for earning their livelihood on the land either. The school curriculum for rural areas could provide vocationally-oriented education in the form of concepts, knowledge and skills needed for ecologically sound land management, which means, in this setting, environmental education. Such an option does not occur to the urban-based educational planner and policy maker who are pursuing a globalisation agenda. Nor is it seen as an option by rural parents. Thus village people are initially puzzled when introduced to the UEEC course and when students are taken along to them to learn about the village ecosystem. They do not see how village life and activities could be of any relevance to education (as they understand it).

In spite of all this, a few rural people in all parts of the country are correctly diagnosing their environmental ills and seeking to cure them on their own. In the non-green-revolution areas of the country women are often taking the lead because they understand better than men that their main problem is ecological poverty, and are focussing their attention on the rehabilitation of village forests through community action (Jackson, 2000). In the green-revolution areas individual families are pioneering alternative farming systems on cultivated land badly damaged by chemicals (Alvares, 1999).

In Uttaranchal numerous village women's groups have formed spontaneously or with a lead from local NGOs. Three common features of these groups are:

- The women have given up hope the government or anyone else will solve the problem of their daily struggle to obtain fuelwood, fodder and water. They come together and formulate an agreed programme of work. Often, once they get going, their men begin lending support and practical help.
- The groups are representative in membership and democratic in functioning. Meetings are held periodically and conducted informally. Agreement is reached by consensus.
- All families in the village share equally the work and expense of implementing their plans, and all share equally the fodder and fuelwood from the rehabilitated forest plots.

We see here a revival of the traditions of local autonomy and self help which began to decay two to three generations ago and which are almost extinct today.

The women are at the same time challenging the marginalisation of the economically and socially disadvantaged members of village society since they focus on community resource management by all families and for all families equally. They are also challenging traditional gender discrimination by taking a lead in managing village affairs, and doing so in accordance with their own perspective, which accords the highest priority to finding solutions to ecological poverty. Yet other activities are the setting up and management (with UEEC assistance) of

pre-school centres for their children, and confronting the problem of alcoholism among their menfolk. All this constitutes a radically new role for women. They are not, however, entirely dismissive of tradition.

India has inherited a colonial bureaucratic system of government aimed at centralised control of people and natural resources. The administration of postcolonial 'development' programmes has been the responsibility of this system, and of NGOs who, by and large, attempt to implement equally centralised programmes with an international donor aid agenda. Local communities, therefore, are not seen as having any other role than that of passive recipients. This strategy has largely failed, creating widespread cynicism and deepening despair.

The village women's groups in Uttaranchal are clearly challenging this governance paradigm, arguing, in effect, that 'development' is something that must be done by people themselves, for themselves, and in their own way. In our (UEEC) attempts to lend a helping hand, we have been guided by this insight. We have come to see that development should be a process in which rural communities experiment and learn as they go along. We outsiders who attempt to participate in this process must also be prepared to learn; there are no formulae; every community must find the best solutions for its particular problems.

Elsewhere in India also rural people are tackling environmental degradation, and they too do not speak of the 'environment', but of livelihoods and community (re)building. In the low-rainfall, drought-prone areas of Northwestern and Central India village communities are organising themselves to reconstruct long-neglected traditional water harvesting and storage structures and build new ones. At the same time they are re-foresting barren and eroding village common land. All this results in rising water tables and more water for household use and irrigation, thus reducing ecological and economic poverty and forced migration. In doing this they have sometimes come into conflict with government, which according to 19th-century laws that are still current, owns all water; people have no right to interfere with the 'natural' flow of water. (For a case study see the report on the Aravari River in Rajasthan, a river which 'came to life again', in the Resurgence magazine No. 206, May/June 2001.)

Other dimensions of water scarcity usually escape notice, such as in villages in arid areas where only the poor suffer deprivation. Large land owners can afford to sink deep tubewells and grow water-intensive cash crops like paddy and sugarcane. This lowers the water table, drying up traditional wells and shallow tube wells on which the smaller land owners depend (Mehta, 2003). Slums and areas of low-income housing in big cities suffer acute water shortage, while the colonies of the affluent enjoy good supplies. Not only that, numerous water parks and golf courses are springing up for the amusement of the urban elite (Sainath, 2004).

The 'green revolution' in India and elsewhere in the postcolonial world has wrought extensive environmental damage, economic ruin, ill health and social disintegration (Third World Network, 1994; Shiva, 1992). In response, individual farmers here and there all over the country are experimenting on their own with organic farming systems. Over 100 cases have been documented by Alvares (1999). They have virtually no recognition or institutional support; they too are pioneers presenting us an alternative vision of the future of farming and rural life. They are challenging the entire scientific edifice underlying modern agriculture

(Jackson, 2002a), the concept that agriculture is a business, and the notion that food should be an internationally-traded commodity.

What Causes These Problems?

It is important for people to recognise when, and to what extent, their problems are self-created. This paves the way for their solution through individual family or local community action. Ascribing the cause to others or to 'the system' leads only to a sense of helplessness and inaction.

The women in the villages of Uttaranchal have tacitly identified, by the solutions they are formulating, the cause of their problem of village forest degradation as their own defective management. This is a significant development. The grazing of cattle, buffaloes and goats in village forest is a common, traditional practice. In a forest biome, however, the grazing of domestic animals gradually destroys forests by blocking the natural process of continuous self-renewal. (The natural vegetative cover of the entire Indian subcontinent, except for the far Northwest, is forest.) The same can be said of fire. The first task in village forest rehabilitation is therefore to stop grazing and check fires. This requires alternative animal and land management strategies.

But this is not the whole story. During the 19th century the British government systematically took over large chunks of village forest all over India to be managed for commercial timber production. Village people were excluded. This policy has continued in independent India. In Uttaranchal there have been numerous violent and non-violent protests (Guha, 1989) and widespread pilferage from these government forests. This, combined with 'scientific', but in reality ecologically unsustainable, management, has resulted in widespread degeneration of these forests, in many cases to treeless, eroding 'wastelands'. At the same time village community life was stressed by the pressures of modernisation; competitiveness replaced co-operation, accelerating the degradation the forest left to the village.

The Forest Department now tacitly acknowledges that it cannot manage its domain. In the past two decades, joint-management projects between village communities and the Forest Department – with a share of the forest produce to the community – have been launched with some success. Many rural people and rural NGOs, however, have come to view the government as unnecessary to the management of forests. The counter argument is that village people are irresponsible and greedy and would spoil the forest, such as it is, if returned to them. The charge of irresponsibility, however, will simply not stick to the village women's groups such as were described earlier. They seem to be the best option we, as a nation, have. But to make this option a reality will require the sort of development proposed in the previous section.

Similarly with the communities who neglected their traditional water-harvesting technologies. From the colonial period onwards government took on itself the responsibility of supplying water in rural areas through large and small engineering works that divert surface flows. It also prohibited rural people by law from interfering with the 'natural flow of water'. Only with the failure of this policy (in terms of increasing drought conditions) have they begun defying the law and asserting their rights over water. As a result of this, and of a recent succession

of bad monsoons, some state governments are now seeking to help and not hinder these communities.

In other instances 'environmental' problems are caused entirely by forces acting on local ecosystems from outside. Tribal communities dependent on hunting/gathering and shifting cultivation have inhabited forests in the tropical, mountainous areas of Eastern and Central India for millennia. By and large their livelihood systems have proved, by their very endurance, to be sustainable (Jackson, 2001). As the modern state has attempted to 'develop' these communities and taken over huge areas of their customary forest tracts to build dams, accommodate timber and mining interests, and to set up nature reserves, tribal communities have been stressed culturally and in terms of their livelihoods. Also, population pressure on the remaining un-confiscated forest area increases as inadequately compensated oustees encroach on the customary areas of other tribes, and sustainability is lost (Fernandes *et al.*, 1988). This, in the eyes of policy makers becomes an 'environmental' problem, and generally the tribal people are blamed for it – because they are 'primitive' and 'don't know any better'. This is leading to immense human suffering and even armed rebellion in large areas of Eastern and Central India.

The nature conservation agenda of the Indian urban elite and Western conservation interests sees its objective as saving 'nature' from people who are spoiling it. The 'people' are those who have lived in the areas declared 'nature reserves' for centuries or millennia and those who seek commercial gain, legally and illegally, from the same areas. It is difficult to check the latter by laws and police when we are unwilling to deal with the engine of industrial development that drives the plundering of such areas. As for the former, conservators do not seem to realise that there are no landscapes left on earth that have not been shaped by human presence (Pretty, 2002). The people living in and around the areas designated reserves are an integral part of nature as it is seen there today and which the conservator wants to 'save'. Seeking to exclude local people is a logical contradiction, for how can it be preserved as it is without their continuing activities? It also reveals an assumption that human beings are not a part of 'nature'.

It is necessary to add that the same urban and Western environmentalists who are so passionate about biodiversity and landscape conservation in nature reserves are usually unconcerned about these same issues in green-revolution farming areas where it would be 'bad for business'. What does this tell us about their environmentalism?

Coming back to Uttaranchal, the effect of mining on a settled agricultural community may be recounted from the point of view of residents of Khirakot village (see Box 2).

Box 2. The Women of Khirakot

Here is an example of a school lesson designed explicitly to explore the problem of the environmental impact of mining. It was included in a preliminary version of the UEEC course offered to students of grade 10 (16 year-old students). Students are told the story of the village of Khirakot in Almora District, Uttaranchal State (Centre for Science and Environment, 1985). A contractor from Kanpur, an industrial city, in Uttar Pradesh State obtained a license to mine soapstone in the forest near the village. Local men were first employed, but they were replaced by outside labour when they began to complain to the

contractor that the mining was destroying their fields and forests. Mine spoil spilled down the mountainside, inundating their cultivated terraces and a new oak plantation. The women forcibly disrupted the work and collected money for a court case. The mine operator attempted to intimidate them, but they stood firm. One woman summed up their resolve this way: 'The mining was destroying our lives, our children's future. How could we let it continue?' After a prolonged struggle, the mining lease was cancelled. The women then began rehabilitating their land and forest plantations (Centre of Science and Environment, 1985).

The students, after reading this story, are asked the following questions:

- Why do you think that the people of Khirakot valued their village forest more than the jobs in the soapstone mine?
- Should all mining in Uttaranchal be banned?
- Is it possible to mine for soapstone, magnesite, etc. without harming the environment and the livelihoods of the local people?
- Why should a businessman from Kanpur have been given a lease for mining at Khirakot and not the people of Khirakot?
- Ground soapstone is used to make talcum powder. The factories to make talcum powder are located in Kanpur and other industrial centres. Why could the people of Khirakot not set up a factory to manufacture talcum powder?

On the coast of Eastern India the Tata company in collaboration with the state government of Orissa planned to take up commercial prawn production, with a view to exports in the Chilika lake, a huge lagoon of brackish water spread over an area of 11 000 km^2. The approximately 100 000 fisherfolk who have until now depended on the lake for their livelihood, organised a protest in which local students joined them. They argue that their fish catch will decline, that the high embankments proposed to be built in the lake will increase the threat of floods and may lead to waterlogging in the surrounding area, that the ecosystem will be polluted with protein feed supplements and that the large flocks of migratory birds that now visit the lake will be kept away (Dogra, 1992). What was at issue here: environment, livelihoods, human rights, development or conservation? (This project was halted, but many similar ones are going ahead – with the anticipated negative 'side effects'.)

More recently a new species of 'environmental' problem has been created for the poor. Industrialisation has so far encouraged manufacturing in urban areas. This has created toxic smog and water, bad smells and unsightliness. A Supreme Court order a few years ago required factories in Delhi to clean up their operations or shut down. The units affected decided to relocate to nearby rural areas where the Court's order does not apply. There they are depleting local ground water supplies and poisoning land, air and water. The original problem has not been solved, except in the eyes of the urban environmentalist. In general, rural communities have not had the strength to fight this new threat to their livelihoods and health. This is but one aspect of the drive to 'beautify and clean up' urban areas all over the country. In the process

slum-dwelling and pavement-dwelling families are being forcibly removed. An environmental agenda is being used as a cover for land acquisition for posh housing, commercial complexes, roads and railways being driven by the global economy (Roy, 2004).

It was suggested earlier that the city and the village be considered elements in a regional ecosystem. This perspective helps us to see that many urban and rural problems are interdependent. Three examples of this have been pointed out to me by Suman Pande (pers. comm., 2003). First is the problem of rural-urban migration. The people who migrate are the ecological refugees and those dispossessed of their livelihood resource base, already mentioned, and also millions of rural artisans whose livelihoods have been destroyed by the urban-centric industrial development process. All of these migrants become a problem (environmentally and otherwise) for those who benefit from this model. When urban industry can absorb no more of them, these refugees return to their villages frustrated, embittered and with no vision or skills that would enable them to regenerate rural land and life.

Another, more specific, example is biomass recycling. The natural flow of biomass from soil back to soil is interrupted in our modern economic system, creating the problem of urban waste disposal (organic garbage and sewage) and soil impoverishment in rural areas. What are the causes? One is the notion that flush toilets are 'modern' (Prakash & Richardson, 1999); another is the very concept that certain materials are 'wastes'. And finally there is the notion that plant nutrients removed from the soil by plant growth can be replenished by chemicals.

Pesticides are a problem for farmers and for urban consumers. They are manufactured in urban factories which are an environmental hazard (recall the Bhopal gas leak tragedy), then used by farmers, resulting in rural ecosystem degradation, and end up in urban food and water supplies. What is the underlying problem here: the notion of 'pests'; the idea that all we need to do is specify the tolerance levels of the human organism to pesticides, and the levels of ecological destruction that can be tolerated in pursuing economic 'development'?

Discussion

The stories related in this paper have been selected in an attempt to display the immense complexity of what we conventionally term 'environmental' problems. This complexity simply does not come into focus through the conceptual lens of Western (global) cultural assumptions we habitually employ. Unless that lens is discarded, unless we question all the assumptions that constitute it, we cannot hope to come to grips with our problems. Have our stories also thrown up any hints of the shape such an alternative conceptual lens might take?

Many stories related in this paper make it clear that rural people do not recognise their problems as 'environmental'. The very concept of an environment seems to disappear from view in talking to them. And yet, their responses to their many problems are not devoid of ecological logic. For example, at a recent meeting of women from several villages, the problem of water shortage was being discussed. An old woman told the group: 'If we want water in our village, we must grow it.' This statement seems to imply that water is a product of good ecosystem management. And, in the context of the village women's groups we have been discussing, this

statement also implies that 'growing' water is a community project.

In contemplating this we (in the UEEC) have been led to formulate the concept of 'ecosystem health' briefly referred to in an earlier paper in this journal (Jackson, 2003c). The village ecosystem, including the human community, is viewed as an organic, dynamic entity, self-regulating and capable of evolution in response to outer pressures, but with its own distinctive trajectory deriving from the logic of its history and geography. It can also be overwhelmed, and even killed, by external pressures such as the influences we have termed modernisation, or by internal contradictions (such as the grazing of domestic animals in village forest). The women are attempting to restore their village ecosystem to good health.

Physical indicators of ecosystem health are: depth of water table, volume and constancy of spring and stream flows, extent of soil erosion, degree of species diversity (in soil, in cultivated crops, in village forests and among domestic animals), and human population in relation to ecosystem carrying capacity. Measurable social indicators are human health (in particular, the incidence of infectious and nutritional deficiency diseases, and cancer), leisure, and personal and social maladjustment such as alcoholism and domestic violence. No less important are unmeasurable social indicators: feelings of wellbeing and security, and community spirit.

'Ecosystem health' can be seen as a concept that logically subsumes: (a) sustainability, (b) productivity, and (c) community empowerment. Community empowerment, in turn, subsumes equity. The means community empowerment is a self-conscious community learning process.

Thus, in working towards ecosystem health 'the environment', from being a peripheral concern, becomes an all-encompassing, all-pervading conceptual matrix for human thought and action. It displaces the contemporary concept of 'progress'/'development' framed in terms of unending increase in material wealth through the 'rational,'scientific' management of human affairs.

Many who have been nurtured in the global cultural paradigm would now agree that such a shift in focus is necessary for survival, and yet cling to the notion of 'the environment' as a distinct conceptual entity. Why? Is it because the implications of abandoning it are too daunting? The prospect of dismantling the worldview of contemporary global culture, and of fashioning a new worldview seems overwhelming – intellectually, and because it would compromise the privileged position in society of those of us who benefit from the *status quo*. Most of us, therefore, pretend that we can solve our problems by 'greening' our present institutions and policies around the edges without challenging them fundamentally. The concept of 'the environment' enables us to do this.

Pondering this phenomenon, we are led to a yet deeper insight. Participants in the worldview of global culture do not see themselves as parts of nature, but as 'detached observers' who can manipulate it at will in pursuit of their personal aims. This is also part of what it means 'to participate in Western or global culture'. People who still participate largely in non-Western, traditional cultures, as some of our stories suggest, appear to presuppose a single, universal cosmic order of which every entity, including every human being, is an integral part, and a representation. Every entity is both part and at the same time the whole. Thus the health and wellbeing of a particular entity depends upon the health and welfare of every other, and of the

whole. I am the 'environment' – which is the whole. Many contemporary writers, from diverse standpoints, are struggling to articulate this idea in a modern idiom (see review by Selby, 2002; also Goldsmith, 1999; Jackson, 2003a; Rowe, 1997).

It begins to appear, therefore, that the 'environment' is merely a necessary, compensatory conceptual construct for people who have willfully alienated themselves from the rest of the universe. There are no 'environmental' problems, or any other sort of problems, 'out there'; there is only the problem of the way we see ourselves and the rest of universe. We therefore need a new way of seeing, a vision in which our problems are various local violations of the cosmic order that occurs due to the assertion by individual human beings of their independence of the whole. Our efforts would then be to understand the requirements of the whole (the concept of a healthy ecosystem is a way of trying to do this) and to find contentment in abiding by them.

This paper began as a quest for a more effective, realistic Indian enviromentalism, but in pursuing it the very object of our quest has metamorphosed into something much wider and deeper: the need for entirely new ways of thinking about our human situation – globally. The quest is daunting, but not hopeless; many individuals and groups of people the world over are engaging in it. The way forward for school and community educators is to learn from/with children and community members in their own local contexts, which means seeking to understand the workings of the cosmic order as it manifests itself in our local ecosystem and community affairs. Gradually a collective vision of a truly just and sustainable future will come into view.

Notes on the Contributor

Michael G. Jackson was a Professor of Agriculture and sometime Director of Research at the G.B. Pant University of Agriculture and Technology at Pantnagar in Uttaranchal State, India. He took early retirement in 1982, went to live in a rural, mountainous area of the state and devoted time to the work of the UEEC where he took part in designing and testing the UEEC school environmental education course. He came to environmental education through observing the adverse environmental, economic and social effects of the green revolution on rural communities. A related interest is in sustainable agriculture, and a collection of his essays on this topic under the title 'The Village as an Ecosystem' will be published next year by Other India Press. Email: unsnpss@sacharnet.in.

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