Transcending boundaries

Reflecting on twenty years of action and research at ATREE

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Why do we care? Unpacking the 'environmental' in our environmental science

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As we at ATREE conduct research on the environment, it would be fair to assume that we care about the environment, or would it? In the first lecture of the core ATREE PhD course called 'Practising Interdisciplinary Research on the Environment,' I usually ask the students how many of them are willing to call themselves 'environmentalists'. Very few hands tend to go up. The same with the label 'conservationists'. When I probe as to why, it seems that the students see environmentalists or conservationists as 'activists', which means taking sides, advocating policies, or staging protests or dharnas as we call them. Whereas, in seeking a PhD and probably careers in academia after that, the students believe that their role is to be a 'scholar', and thereby to shun such activism. When asked whether they 'care' about biodiversity loss or environmental degradation, the answer is of course in the affirmative. But they believe that it is both necessary and possible to study the environment as a 'neutral', 'objective' scientist, not as an activist holding subjective positions.

I would not be surprised if I got a similar reaction from the wider environmental research community. Given that our ultimate motivation in doing environmental research often is to help ameliorate the multifarious environmental problems confronting our society, we struggle with the dilemma of how to 'objectively' study problems that we 'subjectively' care about. But we rarely spend enough time thinking about what exactly it is that we care about and why, what the different forms of environmental 'caring' might be, and how they relate with each other and with other social goals. Rather, we end up playing shadow games, trying to make our recommendations for environmental policy appear value-neutral, because society believes (and we are happy to go along with that belief) that science can provide objective answers to social dilemmas.

BEING SCIENTIFIC WHILE SPEAKING TO ENVIRONMENTAL VALUES

In trying to explain how research on environmental problems is necessarily value-loaded, I have found it useful to start by unpacking the word 'problem'. In much of academia, this word means a 'puzzle', something that is not fully explained by current scientific understanding. What constitutes a problem is then decided by academics, and problem-solving means solving the puzzle to the satisfaction of fellow academics. But environmental research, like all applied research, straddles academia and the real world, and in the real world, the word 'problem' often has a different meaning—it refers to an undesirable situation. Problem-solving here refers to amelioration of that undesirable situation. What is undesirable is of course defined by the values that society holds. Whether it is people suffering from hunger or malnourishment, someone facing differential treatment based on gender or caste, or the population of tigers being decimated—these happenings become 'problems' only when someone holds values by which these phenomena are seen as undesirable, if not abhorrent. When environmental chemists seek to understand air pollution, they are operating on a commonly agreed upon definition of 'pollution', i.e., particles or chemicals that cause undesirable impacts on human health. Similarly, the goals of problem-solving applied research are always (implicitly or explicitly) defined by or with reference to positive values such as 'well-being', 'efficiency', 'sustainability', 'resilience' or 'justice'. While these broader terms are more contested than say pollution, there is no question that all of them are value-laden[1].

Amulya Reddy, one of India's foremost scholars of the energy-society relationship, once

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[1] Lele, S. and RB. Norgaard. 1996. Sustainability and the scientist's burden. *Conservation Biology* 10 (2): 354–365.

pointed out to me that being scientific is not the same as being value-neutral. The former simply requires the systematic application of the scientific method to understand cause-effect relationship in any phenomenon. This distinction can help us resolve the persistent tension between the expectation that scientists will be objective (i.e., value-neutral) and the fact that there is no value-neutral way in which to describe and explain anything called environmental 'degradation'. Our job is not to be value-neutral, but value-explicit, and then systematic in investigating and elucidating the relationship between human and biophysical processes and those outcomes that are valued by someone. Or, as ecological economist Richard Norgaard puts it, one can only be objective with respect to an objective.

Engaging rigorously with the idea of environmental science as necessarily value-laden is, however, not easy. Our socialisation is one reason: those trained as pure scientists, such as biologists, have more difficulty with this idea than those trained as engineers or agronomists, who accept that they have a social mandate, even though they may err on the side of rather uncritically accepting that mandate. Pure scientists then end up doing what Roger Pielke calls 'stealth issue advocacy'. That is, they try to insist that science inexorably leads to unique, 'objectively determined' prescriptions such as 'maintaining biological integrity' or 'ecosystem health' and then go on to define these concepts in subjective and value-loaded ways.

A few environmental scientists have taken a more explicit approach: Michael Soulé and other pioneers of conservation biology make it clear that it is a 'mission-driven discipline.' So also, the proponents of sustainability science. While this is useful, one needs to go further and ask what this characterisation of the environmental scientist's mission means and whether it adequately captures the full range of environmental concerns.

CONSERVATION, SUSTAINABILITY AND ENVIRONMENTAL JUSTICE: DIMENSIONS OF ENVIRONMENTAL CONCERN

Like many of us, my own induction into environmental thinking came about from being exposed to the beauty of wildlife around us through birdwatching trips and nature camps in high school. At that point, being an environmentalist was for me synonymous with being a conservationist. It wasn't till I read the path-breaking Citizens' Report on the State of India's Environment, published in 1982 by Anil Agarwal and others, that I understood the broader significance of environmental processes in all human affairs. As I moved into the field of environmental studies, the new buzzword that emerged was 'sustainability'—a term popularised by the Brundtland Commission's report. It seemed that all environmental concerns could somehow be fitted under the rubric of sustainability. Subsequently, an environmental justice discourse emerged that strongly critiqued the sustainability and conservation discourses as too simplistic. In the meanwhile, the sustainability discourse got transformed (at least partly) into a resilience discourse. The latter discourse has gained even more popularity recently as rapid and unpredictable climate change looms literally on the horizon.

These are not just changes in buzzwords, or shouldn't be. Terms such as conservation, sustainability and environmental justice highlight different but equally important strands or ideas of environmentalism. The issue of tropical forest conservation illustrates this very nicely. My own PhD dissertation sought to understand how and why even individually controlled forests in the Western Ghats of India were supposedly degrading. I realised in the end that degradation or its opposite—sustainability—could only be usefully defined as a decline over time in a particular benefit, say, firewood, that a particular community

may want from the forest. Once identified, one could assess whether this benefit was declining or likely to decline over time, i.e., whether the use was 'sustainable' or not[2, 3]. As sustainability is about maintaining something undiminished over time, a discussion of environmental sustainability draws attention to processes that link current human actions with their future impacts, impacts that may be too far in the future to be part of our typical decision-making calculus. Economists would call these impacts 'temporal' externalities. The value they speak to is that of concern for the future, whether one's own or that of future generations.

But not all problems related to forest management can be couched in terms of sustainable use. Forests also provide other benefits, such as timber or fodder or hydrological regulation, the production of which may be at odds with the production of firewood. Simply put, more trees means less grass, or more timber production means less streamflow. The question of which benefit to prioritise is not a sustainability question, but one about whose benefits to prioritise. Many other environmental issues are even more starkly about environmental justice: impacts of upstream water pollution on downstream consumers of water, upwind factories emitting air pollutants breathed in by downwind communities, the building of large dams that displaces farming populations while producing electricity, or the mining of minerals that deprives forest-dwellers of forest-based livelihoods. These are all problems created by 'spatial' externalities: impacts felt here and now, but by someone other than the decision-maker. And they speak to values of intra-generational justice

or fairness[4]. Of course, several environmental problems consist of both spatial and temporal externalities—such as dams creating immediate displacement by submergence as well as water-logging in the irrigated areas in the long term. Nevertheless, the values underpinning these two types of externalities are quite distinct: one is concern for one's fellow beings while the other is concern for one's own future or possibly one's future generations.

Conservation concerns also cannot be force-fitted into the language of either sustainability or intra-generational justice. Animal rights activists do use the language of inter-species justice for promoting conservation, but others may want to save (say) tigers or lions or pandas only for aesthetic or religious reasons. Indeed, many conservationists in India do not agree with animal rights folks when it comes to dealing with the menace of stray dogs. Nor does it help to put conservation on a pedestal, as the deep ecologists try to do, by invoking the idea of nature having 'intrinsic value'. Because to say that 'nature would have value even if there were no human beings on the face of the earth to give it this value' is to forget that values are always anthropogenic, a product of the human mind. Hence, Madhav Gadgil, one of India's leading conservation biologists, has argued that the "most enduring rationale for conservation of living diversity [is] the provision of an elevating experience for all people," and therefore a 'quality of life' issue. Others may baulk at this particular wording. But most will probably agree with the broader argument that the ethical underpinnings of conserving non-human species or ecosystems, safeguarding one's future, and not destroying someone else's life are fairly distinct. Conservation, sustainability and environmental justice are better seen as three legs of the environmental stool, each in turn containing many layers:

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2 Lele, S. 1994. Sustainable use of biomass resources: a note on definitions, criteria, and practical applications. *Energy for Sustainable Development* 1(4): 42-46.

3 Lele, S. 2000. Degradation, sustainability or transformation? *Seminar* 486: 31-37.

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4 Lele, S. 1994. Sustainability, Environmentalism, and Science. *Pacific Institute Newsletter* 3(1): 1-25.

sustainability-as-dynamic-equilibrium or sustainability-as-resilience, procedural justice or equity or equality, and so on[5].

ARE ENVIRONMENTAL CONCERNS ENOUGH?

In a world where environmental concerns—along any of the above dimensions—are being given short-shift, where over-development is clearly a major part of the problem, and where even under-developed countries seem to put faith in the same processes of modernisation and industrialisation that brought us to the situation we are in today, environmentalists may be forgiven for thinking that they have to plough a lone furrow, and see other societal concerns as distractions at best—be they poverty alleviation, or democracy, or disarmament, or human rights.

A bit of reflection makes it clear, however, that one cannot really act upon the basis of one's environmental values without subscribing to or taking a position on at least some additional social values. For instance, if addressing environmental problems requires changing human behaviour, what methods for bringing about such change are acceptable? Is imposing an environmental agenda by undemocratic means acceptable? Western conservation groups have sometimes implicitly answered the question in the affirmative by working with military dictatorships in tropical countries[6]. But surely the freedom to pursue a conservationist agenda only exists in a democratic setup?

Similarly, can one brush aside the poverty alleviation agenda as 'anthropocentric' when one's own lifestyle—and that of most environ-

mental scientists world-wide—is so far above the poverty line, to put it mildly? On the contrary, as Amita Baviskar has argued, basic amenities of life—the *roti, kapda, makaan* of Indian politics—have inextricable material dimensions and so must be part of an environmentalist agenda. Similarly, one cannot treat all pollution as the same: survival carbon emissions of a poor person are surely on a different footing than the emissions from a rich person's luxury consumption? Social justice thinking has to be overlaid on top of environmental concerns. In short, democracy, poverty alleviation, and social justice are dimensions on which all 'environmental' strategies need to be evaluated and ranked, and, if necessary, discarded.

NARROW AGENDAS LEAD TO POOR SCIENCE

Given this multiplicity of environmental and social goals, one would think the need to do value-explicit and indeed 'multi-valent' science would be obvious. However, a lack of self-reflectivity has meant that, instead of broadening the set of values to which one's applied research speaks, environmental scientists of different persuasions have often tried to bring about convergence around their particular goals by stretching and contorting their science. The Brundtland Report argued that poverty is the outcome of environmental degradation and vice-versa, so that developmental concerns and environmental concerns are not at loggerheads but are in fact perfectly aligned. But in fact, poverty and environmental degradation may often be the result of something else—unequal rights over resources[7].

More recently, the Millennium Ecosystem Assessment has made the empirical argument that sustaining human material well-being necessarily requires conserving all natural

biodiversity, because this biodiversity is the basis for all ecosystem services that generate human well-being. But in fact, most of the recent gains in human material well-being have come from increasing use of abiotic resources, and it is this form of resource use that has also led to the biggest environmental problems, including climate change[8]. The ecosystem service argument then seems nothing but a stealth advocacy of what is really conservation for its own sake.

TOWARDS A MULTI–VALENT ENVIRONMENTAL SCIENCE

I have argued that our environmental science must be underpinned by a conscious, self-reflective, multi-dimensional environmental and social ethic, what Ramachandra Guha has called a 'cross-cultural environmental ethic'. Institutionalising and translating this idea into an approach to research is easier said than done. It involves firstly accepting that all the outcome variables that we use to set up an environmental problem with—forest cover, species diversity, groundwater depth, or the share of photovoltaics in electricity generation—reflect value-loaded positions about what constitutes a 'good' environment and a 'good' society.

At the same time, it requires us to recognise that our task as scientists—social or natural—is not to identify the 'right' environmental policies from our narrow personal notions of this good environment or good society. Instead, our task is to understand and explicate the relationships—links, trade-offs and synergies—between human actions and the larger set of environmental concerns that we see society subscribing to, and also how these might relate to other equally legitimate social goals. For instance, my colleagues and

I have used a five-dimensional framework of adequacy, quality, sustainability, fairness and democratic governance to characterise water management in river basins and then sought to link different interventions and policies to these dimensions[9].

Given the correlation between disciplines and the normative lenses that they inevitably bring to socio-environmental problems, functioning in interdisciplinary teams is an obvious imperative. But what will also be required is developing ways of engaging with diverse social groups, and of reducing the hierarchies between scientists and lay people. If a pun can be pardoned, we need to think about the environment in which we do our environmental science.

Further reading

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