



Research paper

Re-establishing an ecological discourse in the policy debate over how to value ecosystems and biodiversity

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ABSTRACT

In this paper we explore the discourses of ecology, environmental economics, new environmental pragmatism and social ecological economics as they relate to the value of ecosystems and biodiversity. Conceptualizing biodiversity and ecosystems as goods and services that can be represented by monetary values in policy processes is an economic discourse being increasingly championed by ecologists and conservation biologists. The latter promote a new environmental pragmatism internationally as hard-wiring biodiversity and ecosystems services into finance. The approach adopts a narrow instrumentalism, denies value pluralism and incommensurability, and downplays the role of scientific knowledge. Re-establishing an ecological discourse in biodiversity policy implies a crucial role for biophysical indicators as independent policy targets, exemplified in this paper by the Nature Index for Norway. Yet, there is a recognisable need to go beyond a traditional ecological approach to one recognising the interconnections of social, ecological and economic problems. This requires reviving and relating to a range of alternative ecologically informed discourses, including an ecofeminist perspective, in order to transform the increasingly dominant and destructive relationship of humans separated from and domineering over Nature.

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1. Introduction

At the tenth meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD) held in Nagoya, Japan, 18–29 October 2010, new ambitious targets were set: “By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced” (UNEP, 2010a). Yet the loss goes on, as reported by The Living Planet Index—measuring more than 10,000 representative populations of mammals, birds, reptiles, amphibians and fish—there has been a decline by 52 per cent since 1970 (WWF, 2014). Two key open questions remain ever present: How are targets to be met? How are potential conflicts with other societal goals to be addressed? A primary concern in this policy debate has always been the divide between the values of conservation/preservation and economic growth and industrial development.

Thus, for example, deforestation has accelerated the loss of biodiversity as governments and multi-nationals exponentially increase resource extractivism. Growth and profit seeking prioritise the short term financial interests of developers and corporations (e.g., see investigative reports by Sumatra based Eyes on the Forest www.eyesontheforest.or.id). Conversion of old growth forests to mono-culture palm oil production destroys habitat, threatening species existence (e.g. orangutans in Borneo and Sumatra) and pushes forest communities off their land. Besides the food product market, palm oil production has been growing to supply ‘clean Green fuel’ from plantation forest which (having removed the original land use) may then claim to be ‘sustainable’ sources of palm oil. Palm oil production is big business and spreading rapidly in South East Asia (Indonesia, Malaysia and Thailand) and Africa (Gasparatos et al., 2012). Conflicts between developing new industrial agricultural production, and the negative impacts on biodiversity and local people are described as necessary trade-offs. Nothing new there, but what has been changing is the role of ecologist and conservation biologists in the general conflict over development and values as they adopt a new environmental pragmatism (Spash, 2009).

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This is exemplified by the Nature Conservancy in the USA which, under its director, ecologist, Peter Kareiva, advocates widespread use of biodiversity offsets in “development by design, done with the importance of nature to thriving economies foremost in mind” (Kareiva et al., 2012). In this framing, conservation should not pursue the protection of biodiversity for its own sake, but rather as instrumental to providing economic benefits. Traditional conservation is painted as the enemy of the poor. “In the developing world, efforts to constrain growth and protect forests from agriculture are unfair, if not unethical ...” (Kareiva et al., 2012). A moral righteousness is evident in the necessity of poverty alleviation achieved through a very particular form of economic ‘development’. The recommendation is that: “Instead of scolding capitalism, conservationists should partner with corporations in a science-based effort to integrate the value of nature’s benefits into their operations and cultures.” (Kareiva et al., 2012). Such strong rhetoric in favour of traditional economic growth via resource extractivism, under a capital accumulating corporate imperialism, firmly places Nature and human labour in the role of resources to be exploited by the best available technology. The advocacy of the neoliberalisation of Nature, as a conservation strategy, is indicative of the increasing dominance of a narrow economic discourse (Arsel and Büscher, 2012).

As part of this trend, the arguments of environmental economists have come to the fore in conservation. Their position is that markets can work well to allocate resources efficiently, but that all costs and benefits must be taken into account. This means calculating social and environmental costs and internalising the resulting values within the institutions of the market place. That there are unpriced objects in the world is then the central problem that must be corrected by calculating hypothetical market (shadow) prices. This is meant to allow optimal resource management decisions to be taken on the basis of a comprehensive understanding of the financial consequences of all possible actions. Environmental management then becomes a form of accountancy.

Ecologists and conservation biologist have for some time been engaging in the realm of economic discourse both in terms of the subject matter, its language and concepts (e.g., Daily et al., 2000). Increasingly, Nature has become capital, ecosystem structure and functions have become goods and services, and what was valued in its own right requiring protection has become instrumental for providing consumers with utility. Simple money numbers, ideally large and aggregated (e.g., Balmford et al., 2002; Costanza et al., 1997), are seen as using the economic language of business and politics. The UNEP, European Commission and branches of various governments (German, Norwegian, Swedish, Japanese) have supported a major international initiative to establish a dominant monetary value discourse under the title of *The Economics of Ecosystems and Biodiversity* (TEEB), with the central aim of “mainstreaming the economics of Nature” (TEEB, 2010). Most recently international support has been given for an experimental accountancy approach which shifts uneasily from physical measurement into monetary valuation, where apparently all the world’s assets (whether human, natural or social) are to be conceptualised as capital to be made commensurable and traded-off one for the other as necessary (United Nations, 2013). In the world of the mainstream economists and accountants, everything has a price and nothing is sacrosanct or inviolable.

More than this, biodiversity values can be ‘captured’ by developing new financial instruments which represent units of biodiversity that can be traded and bought to offset the impacts of development (UNEP Finance Initiative, 2010). As Sullivan (2012 p.9) states: “Monetisation here is the process whereby something can be converted into money, and thus behave as a commodity that can be exchanged for a monetary payment. A key strategy [in

promoting monetisation] is the recent discursive shift towards the use of language that brings ecology into the domains of economics and accountancy.” We might well ask why natural scientists are prepared to effectively drop their own language in favour of this economic and finance discourse? This has little to do with a traditional scientific understanding of biodiversity or ecosystems or indeed the discourse of ecology that helped establish the modern environmental movement.

The central aim of this paper is to explain and characterise three different approaches that currently coexist and compete in framing ecosystems management and biodiversity policy, and contrast these with a needed fourth approach. In Section 2, we argue traditional ecology remains highly relevant as an independent policy approach, via the use of biophysical indicators, as exemplified by the Norwegian Nature Index. Section 3 explores orthodox environmental economics, based on welfare theory, as providing a discourse spread by academic economists and used rhetorically by various interest groups. In Section 4 we describe how ecologists and conservation biologists have also adopted elements of this discourse as a pragmatic strategy. This has increasingly shifted debate to discussing conservation and management in terms of both monetary valuation and value capture via market-based governance. Problems with all three existing discourses, and the way in which they frame environmental policy, lead us to suggest the need for a new approach whereby social, ecological and economic goals are brought together without reducing one to the other. The potential for such an approach is sketched in Section 5. We close by reflecting upon all four positions. In Table 1 we offer, as a guide to the reader, a summary of key points raised, and referenced in the text, relating to the approaches of traditional ecologists, environmental economists, new environmental pragmatists, and social ecological economists.

2. Ecosystem management and biodiversity policy as an ecological discourse

Ecologists helped establish the importance of natural systems structure and functioning (e.g. nutrient cycles) as a fundamental basis for the survival and health of the inhabitants of Earth. The ability of humans to contaminate systems, disrupt functions and create unintended consequences (e.g. bioaccumulation of toxic chemicals) was a message initially ignored and eventually accepted. The scientific evidence became overwhelming from DDT in the food chain to nuclear tests contaminating mother’s milk. Yet, ecologists and others had to fight hard to get the message across. For example, long range transport of air pollutants was denied and needed empirical evidence before acidic deposition was taken seriously. Linking fossil fuel combustion to the death of forests and lakes took even longer, and was again denied as possible by polluting sources (e.g. coal fired power stations) and nations (e.g. USA, Germany, UK). Ecological understanding helped emphasise the role of complexity and strong uncertainty (ignorance and social indeterminacy) in public policy formation and the need for precaution (European Environment Agency, 2013). This recognised that destroying and/or degrading natural systems’ richness and functioning could lock human society into undesirable, unintended and irreversible consequences.

Long-term adaptations of ecosystems to changes in climate and other environmental variables then became linked to dependence upon available biodiversity (Christensen et al., 1996). The basic idea being that when ecosystems’ processes are subject to disturbance or shocks, greater biodiversity improves stability (resistance) and the ability for recovery (resilience). For example, multiple species with similar capabilities allow for redundancy so that loss of one will not disturb ecosystem functioning. However, the complexity of

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