

Our environment

The silent threat of making our environment unsustainable for human life has only grown slowly since the mid-nineteenth century. However, almost 20 years ago the Union of Concerned Scientists, who included 101 Nobel Prize winners issued a warning of this threat to humankind. Responses have been slight and reformist. Yet the limits of current practices and reforms suggest radical and broad scale changes are necessary to overturn capitalism. Take, for example, the social and environmental failings of so-called 'economic efficiency' and the multiple efforts of those working towards sustainability, which have not succeeded. Brief analyses of developments leading to ecoforestry and its contradictions show the limits of capitalist technology. Similarly water trading and carbon credits are other examples of government policy and market responses that fail to address the tendencies of capitalism to damage the environment and social being.

We can't solve problems by using the same kind of thinking we used when we created them. Albert Einstein (1879-1955) (attributed)

At every step we are reminded that we by no means rule over nature like a conqueror over a foreign people, like someone standing outside nature – but that we, with flesh, blood and brain belong to nature and exist in its midst... Friedrich Engels, originally written in 1876 and then printed in 1934 in *The Dialectics of Nature* 1934 Progress Publishers Moscow

Most governments and businesses are acknowledging the need to address issues of environmental sustainability in workplaces and homes as well as in public spaces, infrastructure and services. However, recognition of the ecological limits of sustaining human life has only evolved very slowly and in ad hoc, partial ways. This follows decades of discussion within scientific communities about the erosion of ecological values and the consequences of this for human and other forms of nature. The key challenge, yet to be addressed, is that the most environmentally sustainable social, technological, environmental and consumption practices will not sustain capitalism.

Silent threat

One of the earliest contributions to popular twentieth century literature on environmental issues was Rachel L Carson's *Silent Spring*, first published in 1958. This book revealed some of the implications and consequences of widespread use of chemical fertilisers and pesticides. Another was Paul R. Erhlich's *The Population Bomb* (1971), a book that highlighted the need to reduce population rates in the context of the natural limits of the planet.

However, disagreements among scientists as well as the reluctance of most politicians, business and religious groups to revise their thinking and reverse their policies and practices, has meant that environmental risks and challenges have been relegated to debating points. All too often the fragmented environmental movement has been marginalised from mainstream debates as rabble-rousing scaremongers and romantic utopian nature lovers.

Progressive social activists, referred to en masse as 'the Left' or 'Leftists' (a heterogeneous conglomeration of people with values emphasising social fairness and broad democratic participation in organising society) also responded in various ways to the rise of environmental challenges. An example of the reluctance of many Leftists to face the implications of the crisis in the ecological state of the planet was found

in arguments that assumed that social concerns competed with environmental ones. Especially a few decades ago, certain elements of the Left viewed environmentalists as neo-Malthusians and caring about the environment was seen to distract from social problems in society.

The complexities of environmental challenges presented difficulties. There were few standard answers for establishing appropriate policies. Most environmental challenges involved implicit collisions between arguments for economic development and curbing environmental exploitation. Taking debates over population pressures as an example, many concluded that people in populous underdeveloped nations should have fewer children per family. However, as *The New Internationalist* (#176, October 1987) reported, in an effort to dispel such myths:

The average American consumes 300 times as much energy as the average Bangladeshi. In fact, the 16 million babies born each year in the rich world will have four times as great an impact in the world's resources as the 109 million born in the poor world. Each American consumes 26,000,000 tons of water, 21,000 gallons of gasoline, 10,150 pounds of meat and 9,000 pounds of wheat in her or his lifetime. And there is one born every 7.5 seconds.

Yet India and China, for example, were introducing population control measures. Meanwhile, without people in overdeveloped countries curbing consumption, the environmental impacts of population increases could not be addressed by population control. Indeed many analysts stressed overconsumption rather than overpopulation. At the same time, environmental activists wanting to curb natural resource use were accused of wanting to keep people in underdeveloped countries poor.

Thus, without strong international structures supporting common visions and cohesive responses, global problems were interpreted and addressed in distinct ways according to national, religious, political and cultural perspectives. Meanwhile environmental degradation continued.

Environmental disasters occurred as a result of activities by specific companies. The many examples include: mercury poisoning through fish contaminated by mercury from the waste water from a chemical factory at Minamata, Japan, from the mid 1950s through to 1968, affecting thousands of people, many fatally; the Russian nuclear disaster at Chernobyl, Ukraine, in 1986, which resulted in the resettlement of hundreds of thousands of people and thousands of cases of thyroid cancer; the release of poisonous gas from a pesticide factory in Bhopal in 1984 resulting in around 20,000 deaths and many more victims; and the consequences of contamination in the Ok Tedi River caused by mine tailings for around 50,000 Papua New Guinean villagers who lived downstream from the Ok Tedi Mine. The common characteristic of such disasters has been the unsatisfactory and inadequate way in which victims have been treated after long periods of denial.

Even more significantly, environmental damage and risks resulted from technologies adopted by entire sectors, such as the widespread use of chemicals throughout agricultural and industrial sectors, involving basic goods and services such as food, buildings, clothing and automotive industries. These developments have involved regular and familiar risks such as major oil spills and acid rain. The growth in international trade has meant regular movements of masses of goods across national boundaries, by energy-intensive road, sea and air transport. Growth in urban

settlements has involved further environmental degradation of vegetation, waterways and air pollution in cities and suburbs. Also, by 2005, around one third (or 1 billion) of urban dwellers lived in slums (UN data cited in *New Internationalist*, January/February 2006: 18-19).

One of the strongest indicators of ecosystem stress has been the growing number of species becoming extinct and species recognised as at risk of extinction. For instance, in the last two decades the Orangutan has lost around four-fifths of its habitat. Thousands of hectares of south-east Asian rainforests had nurtured this 'person of the forest', the only non-African great ape, now only found in Sumatra and Borneo. One-third wild Orangutans died in the 1997-98 forest fires; Orangutans are most likely to be extinct by 2020 (<http://www.orangutan.com>). Tigers are also becoming extinct; there seem to be less

then 1500 Indian tigers alive in the wild (see Nita Bhalla 'Indian tiger population more than halved' Reuters UK 3 August 2007).

Increasing use of fuels has pushed up greenhouse gas emissions that have culminated in global warming and climate change. The engine of such 'progress' has been market-based economies. During the last couple of decades of the twentieth century, such developments were criticised and challenged by local, national and increasingly international networks of environmental activists.

Warning

In November 1992 the Union of Concerned Scientists released a warning (<http://www.ucsusa.org/about/1992-world-scientists.html>) signed by around 1700 scientists, including 101 Nobel Prize winners – most of the surviving recipients of science prizes. This 'World Scientists' Warning to Humanity', released in Washington DC, began, 'Human beings and the natural world are on a collision course.' They counselled immediate action: 'No more than one or a few decades remain before the chance to avert the threats we now confront will be lost and the prospects for humanity immeasurably diminished.'

After outlining some of the indicators and results of degradation of water, air, earth, and vegetation, the warning by the concerned scientists stressed the consequences of 'irreversible loss of species, which by 2100 may reach one-third of all species now living' and overpopulation of the earth in terms of its finite resources and the fact that even then 20 per cent of people lived in absolute poverty, hungry, and 10 per cent with serious malnutrition.

The warning ended with a plea for 'great change in our stewardship of the earth and the life on it... if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated', suggesting alternative energy sources to fossil fuels, recycling and conservation of all natural resources as well as ending poverty and stabilising at the then current 5.4 billion mark.

This warning was just one of many but it was significant for three reasons: the breadth of support it received from so many eminent scientists, the generality of the messages it contained, and the lack of media attention it received.

Indeed it has taken until the first decade of the 21st century for many governments and businesses to take heed of the concerns of the environmental movement.

Responses

Most policy makers, scientists and concerned citizens believe that reforms to business and government practices are achievable using monetary values and market rationale. Indeed many argue that the only way of addressing the environmental challenges that threaten the survival of our species is by using economic arguments and techniques. This includes pricing and trading environmental goods and services and instituting sustainable development models.

Others suspect that capitalist practices are incapable of addressing the problems that they created and argue that fundamental changes to our values, relations and practices are necessary to ensure that the planet on which we live will become and remain habitable for humans in the long term. Some are experimenting with other ways of living and working. However, the dominant capitalist practices, values and relations thwart the activities of such individuals and groups. Their frustrated efforts alone demonstrate the constraints of capitalism on people's ability to live and form futures in ways that they choose.

The fatal limits of capitalist practices involve monetary values and the holistic rationale of profitability, the very dynamics that rule businesses as individual organisations and integrate them within the market system. From this perspective, capitalist reforms to address environmental sustainability can, at best, only lessen the impacts of capitalism's inherently unsustainable practices and, perhaps, extend the time till our species' finale demise.

Limits of current practices and reforms

The first and fatal limit is the necessity for capitalist practices to grow in monetary and other ways. To profit means to grow and to receive back more than what was spent. This profit must be measured by **money** in its role as a unit of account. Such profit means little unless the profit, money acting in the function of a means of exchange, is invested, i.e. used to buy more goods and services to contribute to the growth of capital as a system. This growth of capitalism means extensive (imperialist) and intensive deepening of capitalist organisation within countries already dominated by capitalist systems. Only if all the world were one big 'capitalist' enterprise could we envisage achieving a steady state (no growth, no decline) economy: the owner-manager/s of the enterprise could control the workers from one year to the next to produce the same or even a better quality of goods and services; the workers would use the money given them for wages to buy back a portion of the results of their work; and the owner-manager/s would divide what was left over between themselves, having organised the reproduction of equipment and replacement of natural resources as part of the annual workflow of the one big enterprise.

This hypothetical model more closely approximates state capitalism than it does laissez faire capitalism. While it demonstrates essential characteristics of capitalist practices – the division of labour between managers and the managed (workers) based on ownership of the means of production and the use of money to facilitate the division of the products of work – it does not include other defining characteristics of capitalism, such as the division of labour into separate enterprises according to specialisation and the existence of competing enterprises within sectors.

Capitalist enterprises compete with one another to sell their products and make profits. This dynamic depends on capitalist growth because, while capitalism is regulated by states, it is not managed. Capitalist enterprises produce for the market where familiar market tendencies prevail: those selling satisfactory products at low prices tend to sell more than firms producing poor quality products or more expensive ones. Therefore, the theory goes, that the market pressures managers to supervise the production of reasonable quality products at the minimum price possible without affecting profits and other factors involved with compensation for investment and/or reproduction.

Pressures to improve the environmental impact of enterprises have succeeded most easily where they involve economic advantages, an obvious example being the reduction of waste in the ways that resources are used in production. In a sense all that environmentalists have done here is to point out to capitalists ways that they could achieve ordinary economic efficiencies with the advantage that the environment will not be as used or abused as before. In this instance money is freed for investment elsewhere, where the benefiting business will almost certainly involve environmental impacts. This implication needs to be part of environmental cost-benefit analyses of such reforms, but rarely is. There are ways to improve practices by restricting competitive pressures to be environmentally damaging. For instance, governments can bring in minimum cross-sector standards to protect the environmental impacts of industries. They can prohibit use of environmentally dangerous chemicals and certain practices, such as clear-cutting ecologically rich and diverse native forests. As long as the vast majority of industry players respect such regulation wholesale improvements are possible. However, the timber industry in Australia is a good example of one sector that has strongly resisted the adoption of best practices, say following ecoforestry principles. Such industries face competition from foreign products and argue that environmental improvements in Australia will be undermined by imports of cheaper wood products procured and, where applicable, manufactured in less environmentally sound ways. Industry after industry has resisted government regulation arguing instead for voluntary industry standards, which by the very nature of the case are more vulnerable to failure. The power of industry and implications of strong and competitive international trade undermine the potential to introduce environmentally friendly policies.

In some areas, such as organic farming, niche markets have evolved as certain producers and consumers have been prepared to support more environmentally friendly farming practices by producing and buying products and services of a higher quality. However, the constant complaint is that more sustainable and healthy environmental practices cost too much for most people to apply in workplaces and to purchase in the market.

While efforts to counteract the erosion of the environmental wellbeing of the planet are being debated and devised, they are all too selective, narrow in their field of application and taking far too long to be applied. Again and again arguments and forces associated with so-called economic 'efficiency' guide, direct and limit actions embodying environmental and humane values.

'Economic efficiency'

A key argument in environmental sustainability debates involves the so-called efficiencies of capitalism. The proposition of capitalism's efficiency needs to be examined closely, especially in terms of three aspects of functioning capitalism: for capital in general, sometimes referred to as 'the economy'; for particular capitals, meaning sectors or other kinds of capitalist groups; and the individual enterprise or individual capitalist.

Karl Marx applied the philosophical categories of general, particular and individual to the economy, deriving his methods and analysis by way of a critique of a famous German philosopher, Hegel (see [References](#)). The analysis here aims to show how capitalism functions in a partial way for particular social sectors and how competition, in contrast to cooperation, almost inevitably erodes environmental as well as social values such as whole-of-landscape and whole-of-community wellbeing.

In a capitalist context sustainability will always be social, economic and environmental by the very nature of the case. Thus, added to the traditional critiques of capitalism as socially exploitative and divisive and environmentally wasteful is a new understanding, or at least questioning, that capitalism is wholly inadequate in terms of addressing environmental challenges.

In order not to get bound up by the logical red herrings and seeming rationalities of the capitalist cause, which are self-referential, it is important to understand that so-called economic efficiencies rarely make sense outside the context of capitalism – a capitalist economic structure, monetary values and the principles of profit making.

If triple bottom line accounting and guidelines are followed then sustainability involves sustaining capitalism and the strongest critique of this approach arises from those who question how a balance between or resolution of conflicting interests is achieved. In triple bottom line perspectives capitalist social and physical structures dominate who is sustained, what is sustained and how it is sustained.

But, even then, the social achievements are not satisfactory across the collectivity of humans, as indicated in a publication produced by the Washington DC based Worldwatch Institute and the United Nations Environment Programme (UNEP), *Vital Signs 2003* (88-9): The global economy has grown sevenfold since 1950. Meanwhile, the disparity in per capita gross domestic product between the 20 richest and 20 poorest nations more than doubled between 1960 and 1995.

Of all high-income nations, the United States has the most unequal distribution of income, with over 30 percent of income in the hands of the richest 10 percent and only 1.8 percent going to the poorest 10 percent.

Also the Worldwatch Institute's 2004 issue of the State of the World Report (<http://www.worldwatch.org/node/1043>) focused on consumption to highlight that: there are more than 1.7 billion human beings in the consumer society—and their numbers are growing yearly. In many cases, excessive consumption burdens societies with bulging landfills, declining fish stocks, and rising obesity levels. Meanwhile, there are still another 2.8 billion who consume too little and who suffer from hunger, homelessness, and poverty.

Working towards sustainability

Ecological economics evolved to address the challenges of sustainability through interdisciplinary approaches drawing on economics and environmental sciences. Many

working in this area focus on ways to impute prices for environmental assets like forests and forest services such as purifying water and air. This approach has serious limits because prices of capitalist means of production are a function as well as an input to prices of the commodities or services that they contribute to creating. This method is based on applying accounting models developed for simple means of production such as factories to complex forest or marine environments, methods that have already shown their inadequacies in the case of capitalist farms and farming that has been reformed in the image of a factory. See *Seeing Like A State: How Certain Schemes to Improve the Human Condition Have Failed* by James C Scott (1998, Yale University Press, New Haven). Ecological economists most often assume that production for the market presents no insurmountable problems for achieving sustainable practices and argue that the main problem is to regulate or otherwise tinker with the system, for instance to internalise erstwhile economic externalities, i.e. costs entailed in but not covered by capitalist production.

Examples of externalities include using and polluting air, water and soil in places where appropriate environmental regulations do not apply, and truck companies' using roads without contributing, say by paying taxes, to the establishment and maintenance of the roads that they require, damage and wear out.

There are several arguments against this approach, which is very popular because it broadly accepts current capitalist models and stakeholders.

Capitalists argue against and even impede this approach in as much as it emphasises regulation of producers and management of the conditions within which 'free' market activities exist. They ask, to begin with, who is going to decide, how much will it cost for them to decide, and who will pay for this decision-making process, which centres on how much environmental resources or conditions of production will cost if not left to free market forces?

In conclusion they point out that if much more than one or two products or sectors of production are involved in such a process, what will be left in the way of a free market? Those who support the so-called free market argue that they want as few constraints as possible. They ask at what point such regulations harbour not only state capitalism but also state communism, arguments that are meant to put paid to any discussions in this direction. It is difficult to summarise their position as detailed logical arguments, suffice to say that they almost invariably ignore or deflect impending environmental crises with the simplistic assumption that market forces are beyond question the best procedure, even heavenly. Some of the most obvious

examples of wanton destruction showing that capitalists disregard environmental limits and subtle ecological interdependencies have occurred in extractive industries such as mining and timber.

The main weakness of this approach is that capitalists as individuals and as sectors argue for supportive state interventions such as subsidies and protection that of course interfere with 'free' market forces, just as capital in general supports economic growth, greater access to resources and universal wage stagnation or cuts. Thus ecological economists will point to social and other interventions; that have not had the effect of fragmenting or dismantling capitalism and run the line that these environmental reforms are feasible as well as serving a constructive purpose.

One area of seemingly complete agreement has been the creation of green environmentally friendly markets and property rights in nature in areas previously considered free services to households and businesses and under minimal state management. For instance, coinciding with economic rationalist privatisations, there has been a worldwide trend in corporate management of water services. Last century people owned landscapes and registered patents on more and more inventions, now they have patents on seeds and experiment more and more, for example producing genetically modified food.

In as much as the environment can be capitalised on, further exploited, owned and recreated to earn money the façade that environmental benefits ensue rarely passes a

rigorous analysis from a general point of view, rather than simply an analysis from an individual or particular perspective. Often business people will argue that their product and production processes are more environmentally friendly or cleaner than before and superior to other businesses in their sector. However, the planet is suffering from overproduction and overconsumption by specific social groups who are in the strongest economic positions. Thus, despite being more environmentally aware, capital accumulation through further intensity of business activities is still contributing to the environmental crisis from a holistic and long-term perspective.

The problem is that knowledge and management of environmental factors is complex. Many aspects of environmental resources and conditions are unknown, barely understood or found wanting over time, meaning that previous policies or strategies need to be revised. From this perspective making decisions is time-consuming and risky. Also standard or general principles need to be amended and tailored to specific ecological contexts, associated with climate and other landscape and ecological community factors.

There are few processes in place for using sound environmental information to drive market reforms. The market is a primitive conglomeration of power bases in property, human interactions and commodity flows. The kinds of information scientists offer with respect to pricing for environmental concerns are far more complex than simple social policies, of setting welfare benefits and so on.

The subtlest difficulty with this approach is that it reinforces faith in the dominance and logic of capitalism at a point in history when the fundamentals of capitalism, the system of producing for money, need to be questioned to the very core.

Many say that they do not understand economics and believe that this says more about themselves than about economics. Indeed the amount of energy invested into making market players and forces environmentally friendly contributes to the feeling that, even though they have doubts about economics, some people who do understand economics will manage the situation. Indeed one suspects that, the extent to which the complexity of ecological matters rivals the mysteries of capitalism, uncertainty mixed with blind optimism contributes to apathy, laziness and a false security. How could the world as we know it end? Surely the government just has to employ the right expert, some genius will arise to the situation and it will be okay.

Climate change illustrates how a multiplicity of factors often require attention and the lack of capacity of current social, political and economic structures and frameworks to address this problem. Climate change is only one environmental challenge and not even the 'key' one although simply reducing production and consumption would relieve many environmental problems. Yet most of the focus is on climate change, carbon and carbon trading. Thus the market is immediately sought to cure problems market practices have created!

Another bizarre example of assuming that capitalism is a sustainable and natural form of human society is a project that aims to save elephants by treating them like workers, through selling their art – applying our social organisation as a form of conservation management (<http://www.elephantart.com>), an experiment which is offered as a model for saving other species too. It is no laughing matter because there is no time for rampant and dogmatic capitalists to experiment in such ways.

Ecoforestry

A discussion of ecoforestry provides some practical examples of arguments best appreciated in the context of a specific trend, development or landscape. Other areas such as marine and coastal environments and the mining sector might be examined in similar ways.

Ecoforestry refers to various approaches that are more forest-friendly alternatives to conventional capitalist forestry. These range from light green capitalist approaches through to deep green and non-monetary ways of living in, by, from and with forests. James C Scott's *Seeing Like A State: How Certain Schemes to Improve the Human Condition Have Failed* (1998, Yale University Press, New Haven), an analysis of capitalist

governance, elaborates on the approach of the state to forests as a metaphor for the characteristically anti-social and anti-nature principles and practices of bureaucratic management. For instance, he points to the standardised layout of mono-species plantations as rational only in terms of bureaucratic factory style management with a short-term profit-making aim. Indeed by the second half of the twentieth century big industry and big government together determined most of the management of forests worldwide.

Throughout the second half of the twentieth century industrial equipment and multinational company organisations allowed for broad-scale clear-cutting of patches of forests, and the trade in timber and low-value-added wood products increased and became more international. The Philippines is probably the most extreme example of exploitation during this period. Centuries ago, 90-95 percent of the country was covered by rainforest. By a century ago certain areas had been seriously deforested but still 70 per cent had rainforest growing over it. However, by 1992, less than 10 per cent of the Philippines was covered with old-growth rainforest. (See the work of LR Heaney and JC Regalado Jr at Chicago's Field Museum website:

http://www.fieldmuseum.org/vanishing_treasures/Index.htm).

The western discipline of forestry evolved with a focus on the commercial management of trees rather than appreciating traditional forms of community forestry, the ecosystem services that forests provide, forests as sources of a broad range of forest products (such as honey, medicinal plants and food) as well as locale-specific management. As such plantations featured fast-growing, short-rotation and exotic monocultures of single species stands producing poorer quality wood products, often used for pulp (paper) making and composite wood products, which involved unhealthy chemicals such as glues.

In Australia protests against the misuse and mismanagement of native forests had become the most prominent area of environmental action by the 1980s. Collusions between state and industry centred on the commercial aspects of forestry while government scientists found that concerns for the ecological wellbeing of forests were increasingly compromised and marginalised. Broad-scale state ownership and control of forests meant that environmental campaigns focused directly on changing state policy to reduce the rate of cutting in forests, to conserve high quality and unique natural resources and reintroduce less exploitative and damaging practices by the timber industry.

Two aspects of tensions within and struggles between industry, state and environmental players illustrate the domination of capitalist interests and the dilemmas facing those concerned with sustainability, with people living in relative balance with nature. The first aspect concerns the limited strategies available for people to be involved in making decisions over the use and management of forests in a country that is proud of its democratic rights. The second aspect centres on certain aspects of the various disputes about how to achieve sustainable forests, a sustainable society.

Firstly, the people with environmental concerns were on the defensive as the media and political and economic structures ignored, distorted and sensationalised their arguments. In Australia voting is mandatory but only a few per cent of the population belong to political parties, let alone have an impact on policy making. Many have decided that special interest lobby groups are the most successful ways of achieving policy change in areas that concern them. At the same time organised business and union lobbies joined hands to fight for the continuation and expansion of their industry at all costs, convincing both of the main parties, Liberal (business) and Labor (workers) that their collective self-interest was in the public's (consumers') interests and was their right. This situation brought the Greens party into being, but its progress has suffered from the constraints of institutionalised parliamentary democracy. This fight alone indicates the narrow and capitalist character of current political processes and structures. The practice of zoning forests for commercial and conservation purposes similarly mirrors social conflict rather than environmental sense – see Nelson A (2005), and others, in [References](#).

Secondly, the environmental movement was split in several directions with respect to forest use and management. Some of these splits are explained by the fact that the same

policy had varying effects depending on the forest or wider landscape in question. One section of the movement was concerned mainly to preserve old growth forests in as natural a state as possible and advocated for wholesale movement of the timber industry into plantations. Another section directly opposed this strategy arguing that mono-species plantations were environmentally damaging and risky because they required chemical fertilizers and insecticides that polluted air and water ways, were prone to fire and introduced mono-crop imbalances to local landscapes. Thus, the latter argued for improved timber industry practices and ecoforestry approaches to native forest management and use.

Ecoforestry is not a cohesive discipline but advocates argue for environmentally and socially friendly reforms to the running of forests by big government and big industry, such as: phasing out clear-cutting, thinning, and gathering some (not all) fallen branches and trees, radial sawing of timber, value-adding (making wooden products) in areas local to the forest, exploring multiple uses and diverse locally appropriate management styles in forests. Ecoforestry is a diverse movement that is not anti-capitalist but rather incorporates the hope that capitalism and money can be tooled to serve nature and humans rather than erode their qualities and talents. See *Ecoforestry: the Art and Science of Sustainable Forest Use* edited by Alan Drengson and Duncan Taylor (1997, New Society Publishers, Gabriola Island). Ecoforestry intersects with, embraces and derives some of its directions and practices from permaculture, agroforestry (which simply integrates production of trees with farming) and analogue forestry (which draws on indigenous ecosystem structures and dynamics but uses exotic species too).

In Australia traditional Indigenous people's forestry practices disappeared as a result of the white invasion and efforts for a re-emergence of such practice has only started in the last decade or two. Ecotourism has become a strong competitor to conventional extraction industries because many Australian forests feature special ecological and aesthetic recreational qualities that conflict with clear-cutting but are complementary to non-extractive industries such as keeping bees and gathering medicinal plants and nursery seeds in forests.

Environmentalists have not only conducted dangerous actions to prevent timber industry activities in forests of high ecological value but also have worked to convince 'ordinary Australians' to boycott purchasing both Australian indigenous and imported native timbers that are endangered, urging recycling of timber products and substitution where environmentally rational.

Political parties streamline pro-capitalist policies and regard capitalism itself, not the natural environment, as the source of social sustenance. As such there has been a continual tendency to treat environmental concerns as secondary, as simply sentimental and impractical. Thus mainstream economic and political interests created a strong barrier to a movement that combined community-based concerns over managing the forest in more respectful and socially meaningful ways with professional scientific research and forest-friendly alternatives to conventional forestry practices and state forestry policies centring on issues of environmental sustainability. At the same time people all over the world have been working hard to develop and introduce political and economic alternatives to address similar

problems with forest management in better ways. An approach worth commenting on involves prices.

Some sections of the environment movement naively stress economic arguments for preserving forests. They argue, for instance, that ecotourism is less environmentally damaging — a position yet to be proved and only appropriate in certain cases — and that developing a price for a forest would surely prove its worth. However, imputing a price for the forest by definition treats it as a productive asset for use by market forces. Prices of productive assets are derived from treating them as stocks with a current value equivalent to the stream of services (monetary income flows) that it produces. This perspective implies vulnerability to exploitation and strict capitalist management principles if the forest is controlled as an asset or to neglect and destruction as it loses or is seen to lose

market potential. This strategy leads one back into the capitalist black box. By emphasising monetary, market values, environmental ones are automatically distorted. What happens to items of high ecological value that have no or very little commercial value? In Australia, economic rationalism and privatisations of erstwhile state operations has led to progressive evaluations and management of natural resources as assets. There are calls to internalise maintenance, repair and even restoration of environments in the costs that constitute prices, say of timber coming from a forest with high ecological values. However, these ideas have little practicality in a competitive capitalist world, where the constitution of prices and market competition and success relies precisely on externalising as many costs as possible, that is ignoring or relying others to address the erosion of environmental qualities. Estimates of costs/prices of ecological maintenance are highly contested, in terms of the level of and approaches to caring for the environment. Within this perspective there are numerous variations of the theme allocating a fraction of earnings from capitalist production to repair what it has destroyed in its own process of being – let's spend more GNP on the environment, and so on. As it stands where small foresters in other countries have taken a stewardship role it only works where they act as a collective market reality and, therefore, are constrained and threatened by large capital (unless prohibited under law). In Australia the timber industry has often survived on licences to cut in state-managed forests, prices evolving within constraints determined by price levels of imports, with local workers among the most poorly paid, and scientists concerned about environmental aspects fighting a losing war against commercial interests. Ecological economics tries to develop ways for economics to support and produce sustainable environmental outcomes. However, such interventions interrupt straightforward market mechanisms or, in as much as they comply with them, become subject to anti-social and anti-environmental outcomes, which operate in general and particular ways despite attention on individual cases. These points are addressed below when discussing systems of natural resource trading and credits.

Technology

Given the constraints of needing to produce what people with money want to buy and competition in the market from other producers whose products or services achieve the same purposes, it is often argued that capitalism is the most efficient form of production. In particular, the rules of the game pressure all producers to adopt technologies that reduce costs. Although economists of various tendencies, Right and Left, assume a need to rationalise the apparent efficiencies of the system, the economic efficiencies of capitalism often reduce to social and environmental deficiencies. Taking techniques of production as an example, however, it seems clear that efficiency in monetary, capitalist, terms does not equate with environmental or social efficiencies. Let's stick with forestry and ecoforestry. Hundreds of years ago forests right round the world were valued by local communities living within them as a valuable source of their means of existence. Indigenous people in pre-settlement Australian forests used its plant and animal products and ecological services as reliable sources of water, food, clothing, shelter, medicines and so on. They created simple tools for handcrafting, digging and hunting and used fire as a technique of production. They had collective rituals with neighbouring groups and engaged in limited non-monetary exchange, which involved animals, materials and tools. They controlled their population in balance with nature's potential.

In *Triumph of the Nomads*, Australian historian Geoffrey Blainey (1975 Macmillan Melbourne/North Sydney: 162-3) has pointed out that at the time of the white invasion Aboriginal women were likely to have spent less than half of each day gathering and preparing food while those who named and settled Australia came from poor agricultural and industrial regions with onerous work schedules and conditions. In contrast to the average person living in nations industrialising at that time, Indigenous lifestyles had clear comparative advantages when assessed in terms of social and ecological criteria. But no such criteria were applied, rather the Indigenous lifestyle was criticised as primitive and

uncivilised, meaning that they had no money, trade, private property, waged work – in short ‘capital’ – and were not Christians. The Europeans introduced disease, guns and Christianity as well as the greater god, money.

Colonial history was marked by significant stages of capitalist advance: depriving the Indigenous peoples of their land and developing the country in terms of capitalist relations and means of production, including the discovery of gold (quasi-money). Clearing occurred for settlement, production and mobility. Wood was a critical material for buildings, furniture, fences, and other means and conditions of production, as well as being a critical source of fuel. Convicts and settlers worked axes and large saws, and transport of timber relied on animal drawn vehicles as well as watercraft.

Australia was deficient in softwoods and started importing them. The Australian economy and forest industry developed on both local and global feet. Money straddled, translated and guided the rationality of practices between trade and production for trade. If you could earn money doing it you did it; if not, you didn't do it. British investments helped capital accumulation in Australia. Meanwhile, for the now diminished Indigenous peoples the forests offered some of the least penetrable habitats within which to preserve their non-monetary cultures and an industry within which others worked in a landscape they revered.

Steam-driven sawmills were established in hundreds of places from the mid- nineteenth century and tramways laid into forests to feed them. As John Dargavel details in his classic history *Fashioning Australia's Forests* (1995, Oxford University Press, Melbourne), entrepreneurs establishing these means of production needed security of access yet competed with farmers. Thus the state stepped in and reserved forests that were regulated through licences for use by the timber cutters and merchants. In Western Australia long-term concessions later in the nineteenth century enabled the establishment of larger sawmills that employed workers who became organised. Even so mobile sleeper cutters and bush fallers were on piece- rate wages, and the mills contracted small entrepreneurs who worked with horses and men dragging timber out from the forests. It was an extractive industry using simple tools, the product a vital means and material of production as well as fuelling manufacture.

Thus, even before the twentieth century when timber again supported Australia's industrialisation, which was affected by global competition and other capitalist pressures, introduced technology as well as some in situ inventions contributed to the development of the forestry sector. Pulp mills were established around the time of World War I by adapting foreign technologies to local conditions and materials to supply an emerging paper industry. By the end of the twentieth century the dual powers of big industry and big government resulted in forest landscapes that were state protected or managed and used substantially for commercial ends. Thus even as prices for timber fell and the number of hours taken to extract it were reduced by technological advances this did not mean more environmentally friendly practices. Also timber workers were still comparatively lowly paid and narrowly skilled members of the workforce and this has contributed to their broadly conservative pro- growth and anti-environmental position.

Meanwhile, by 1980, forested land had diminished to less than two-thirds of those estimated at the time of settlement (1998, *Australia's State of the Forest Report*, Bureau of Rural Sciences, Canberra), with ecosystem effects arising from the fragmentation and diminished quality of native forests as well as the sheer extent of clearing. Environmental groups were campaigning against numerous problems associated with exploitation and destructive management practices in forests, urging consumer boycotts of imports from native forests exploited overseas, making consumers aware of forest-friendly products and encouraging less, but more environmentally friendly, consumption. By this time the full effects of capitalist technologies – enabling massive mechanical clear-cutting, the use of fertilisers and chemicals in plantations through to pulp and paper manufacturing and environmentally unsound inking of paper – were apparent.

Over the last couple of decades radial sawing and small mobile mills, agroforestry and ecotourist ventures developed. However, these environmentally and socially friendly

experiments remain marginalised by the constraints of capitalism and the power of the market. Products and services created by slower technologies generally cost more. Government and industry measure the success of business in profits and growth; small businesses based on environmentally and socially friendly values and practices are running a different race.

In central Victoria, Australia, a formal government-initiated community forestry trial in the early twenty-first century centring on degraded woodlands failed to incorporate deep environmental reforms in policies or practices or produce models for transfer when it was stymied by the state. Even so the sheer level of destruction and the linked threats of climate change forced politicians to heed certain calls for restraint and the timber industry was also called to heel by international pressures to preserve the ecological worth of forests, using

certification schemes, agreements, and world heritage listings for many remaining large intact forest landscapes. At the same time cheap Asian timber imports compete to pressure timber companies whose prices are negotiated with international and national wholesalers.

Capitalist technologies must, by definition, streamline the production process so that products or services can be produced more cheaply per unit. In the process no single entrepreneur will incorporate more expensive environmentally friendly forms of production unless the whole sector volunteers or is under state regulation to do so or, say, a niche market of consumers prepared to pay the costs of products or services produced in a more environmentally friendly way appears. Still there is the question of international competition, which suggests that the only way change will occur is by global compacts and/or diminishing trade. This flies in the face of the strongest capitalist international forces, such as transnational companies, 'free' trade agreements and the International Monetary Fund.

Thus the capacity to limit our consumption of wood and technologies for much more environmentally friendly practices exist. Alternative small-scale technologies across the board would mean that less timber would be required for use as materials and fuel in other industries and that forests could be used for a diversity of purposes instead of mainly the most commercially viable timber one. A Canadian university research team led by Michael M'Gonigle produced a report, *When There's a Way, There's a Will* (see [References](#)) outlining a sophisticated model addressing how one could implement the benefits of local small-scale forest practices and economies centring on community forestry. The Community Ecosystem Trust model includes tenders for forestry activities being evaluated in terms of environmental criteria and best practices rather than short-term commercial cost efficiencies in terms of market values. It assumes a capitalist context but even so the constraints of capitalism – production for trade to make as much money as possible – work against its implementation. Such macro-scale holistic responses to the challenge continually fail because the mainstream monetary society works directly and indirectly against them.

Another dramatic example at a micro-scale is shown in the use and waste of disposable wooden chopsticks in China. In the 6 February 2001 edition of the *Washington Post* Philip P Pan reported:

China now produces and discards more than 45 billion pairs of disposable chopsticks every year, cutting down as many as 25 million trees in the process, according to government statistics. Another 15 billion pairs are exported to Japan, South Korea and other countries. At the current rate of timber use, environmentalists warn, China will consume its remaining forests in about a decade. In April 2006 the Chinese government imposed a 5% tax on disposable wooden chopsticks to try and reduce this waste (see

<http://www.abc.net.au/news/newsitems/200603/s1598517.htm>). The Chinese economy has grown by creating more and more products, many for export, and the promotion of 'consumption' of more goods and waste, which fast food epitomises.

Thus capitalist technologies are simply those technologies that assist capitalists to make more goods and services for the market, that either save on workers' wages or other

material and equipment costs, or create new products and services for a return that covers the costs of creating and maintaining the technology. Meanwhile techniques to save or economise on use, consumption, and therefore production are in fact anti-capitalist. Niche markets for products and services created in an environmentally friendly way do exist, but they rely on customers or clients who earn money in substantially environmentally and socially unfriendly ways.

Water trading and carbon credits

Responses to environmental limits and pollution have centred on capitalist-friendly solutions. 'Let's make a market from licences for water flows.' 'Let's divide activities into those that produce and those that absorb carbon dioxide or similar greenhouse gas emissions and view them as a balance.' For instance, it is okay to make a specific plane flight if you also pay for a tree to be planted, a 'carbon credit' to offset or balance your 'carbon debt', and so end up 'carbon neutral'.

There are lots of problems with such 'solutions'. Making licences to use say water from a specific source negotiable has meant, in certain cases, that they are more likely to be in full use than before when licences to use water were relatively cheap and simply meant you could use up to a certain limit. It didn't matter if you didn't use your allocation. Now the cost means it's better to sell on if you're not using the water flow. Also the water flow is no more dependable, in terms of quality or quantity, for having a price. Licences to water allocations now exist in a market similar to land, with all the oddities pointed out by Heilbroner (in [Prices](#)).

Concepts of carbon credits and neutrality rely on calculations that are based on: averages; limited, and not necessarily reliable, knowledge of environmental processes and results; the implications of imaginary (not real or actual) scenarios; and all the risks entailed when credits depend on future activities and results to offset current debts. In *Heat: How To Stop the Planet Burning*, George Monbiot (2006, 209-11) outlines some of the barriers to 'buying our way out of trouble' (209) due to false accounting, especially because 'accurate accountancy for many carbon offset projects, however honest the attempt, is simply impossible'. You could plant a tree but it might die or simply grow where another tree would have grown anyway. Your tree might be planted where it will not counteract, and might even contribute to, the greenhouse effect. Also, spending today and repaying later, is exactly what has resulted in climate change and might contribute to other such actions, which unbalance nature to such an extent that no tomorrow exists.

The problem is that when you project artificial accounting balance frameworks on environmental landscapes and dynamics you simply intensify and amplify the dangers of capitalist human activities that have resulted in current environmental crises. Capitalism is a strongly social structure: even while focusing on the use of natural resources and promoting materialism, production for the market does not imitate, incorporate or complement natural world laws and processes. Capitalist categories present people as discrete individuals, as workers, managers and consumers, and simplify and categorise environmental resources and services as private property, stocks and flows, assets, inputs and outputs. However, the environment, its water supplies, energy flows and carbon emissions incorporate complex and subtle principles and processes including synergistic, invisible and unknown dynamics incompatible with economic frameworks that neither conserve nor manage natural resources in the most beneficial ways for both human beings and non-human nature.

Individualistic capitalist concepts of carbon credits and neutrality and water trading schemes dissolve in the face of real environmental risks to our life as a species. For instance, immediate and collective action is necessary with respect to climate change. In *With Speed and Violence: Why Scientists Fear Tipping Points in Climate Change* (2007, Beacon Press, Boston), Fred Pearce shows how climate change has been activated by capitalist human activities within the context of multiple natural processes impacting on planetary temperature. This work alone shows not only how critical it is that we act radically and now but also how absurd it is to believe that greenhouse gas emissions can be

controlled and climate change reversed simply by encouraging everyone to calculate and counterbalance their individual impact. No such calculations are reliable in terms of estimating, tracing and managing the gross effects of human practices on a planet already stressed to an uncertain but definitely dangerous degree.

Even some of the most radical ideas, such as the proposed 'rationing' schemes floated by George Monbiot (46-7) and Mark Lynas and Sam Alexandroni ('Why We Must Ration the Future' and 'So How Would It Actually Work', *New Statesman*, 23 October 2006) fail in that they involve monetary and market mechanisms when what is really required is a non-monetary, non-tradable ration. The strength of proposals for contraction and convergence, i.e. limiting carbon emitting activities and sharing the products and services of polluting activities allowed equally among people all over the earth, is that they seem to address the problem from sound standpoints of social justice and environmental limits.

However, such proposals put the cart before the horse in imagining that controls can be achieved at the endpoint of distribution and consumption. We need controls at points of production, including the use of all kinds of vehicles, homes, factories and farms. We know, for instance, that many poor tropical people increase greenhouse gases simply by cooking over fires. How will they live within their carbon ration? The ration seems equitable but takes no account of distinct circumstances, instead seeing it as a way to force to action. Who manages and monitors such a scheme from planetary and local levels? What is really disturbing about talking about carbon allowances and rations in the same breath as referring to them as negotiable commodities traded at a market-based price, and even as a 'new currency' (Monbiot 46), is that the licence to emit carbon becomes subject to a plethora of broader market forces with a monetary value. It simply beggars the imagination to think that it would be possible to detail or implement such schemes in ways that might avoid the anti-social anti-environment principles of monetary values and capitalist growth.

Capitalism

Capitalism is a quasi-religious social system, involving particular relations of power between workers and capitalists orchestrated and supported by capitalist states. The religious aspects of capitalism involve the entire ideology and ritual of developing capitalist units of production and the market, which involves people playing roles of workers and capitalists. It is of no significance that the one individual might be at one moment a capitalist and the next a worker or, as is the case with superannuation, a worker at the same time as a capitalist. Their distinct activities and relations in different social roles reify and rationalise concepts such as capital, growth and profits, which do not have any real material existence but are, in fact, mental projections of a social kind and part of a game between people, the principles and results of which are both anti-nature and inhumane.

The failure of capitalism is epitomised in the momentum of economic growth, which is at the heart of its economic, social and political dynamic. Growth is considered a key success of capitalism, while it might be better viewed as its key weakness. Let's examine this from the perspective of individual, particular and general capitals.

The individual capitalist is obliged to ask as much for their product as the market can bear. Not to do so risks not making any or enough profit. Decisions made by managers about material inputs, technologies used in production, the number, skill and knowledge level of workers, place of production and so on are all simplified by referring to one indicator – will this decision save or cost us in monetary terms? Capitalism is a tightly competitive system. The lack of planning between cohorts of supply (just capitalists) and demand (all people, including capitalists with the purchasing power and interest in buying) means that every decision involves serious levels of risk.

The freedom of the market boils down to lack of planning and management, which is why the initial analyses, reforms and alternatives to capitalism have centred on state models and policies. As such the state has not only been the most useful and handy structure to implement planning and shared management but also has proved to be the only structure

so far capable of withstanding national and international capitalist counterpressures – investors, traders, other states, and so on.

The singular failure of international structures that have sought an arms-length form of planetary governance is their incapacity to uphold the right of people to be or not be involved in the money system, in capitalism. Universal rights and responsibilities of individuals have evolved but the ethics of freedom centre on free-market structures and so-called democracies that exist in such economies as the ideal conditions in which to establish and preserve individual thoughts, choice and activities. No active dissent from this position is tolerated but rather counteracted with a range of measures.

In terms of counteranalyses and resistance successive recent generations have blamed the International Monetary Fund and the United Nations for economic and political prejudice, weakness and inaction. While bureaucrats and politicians associated with both institutions might have been more progressive in terms of considering the social and environmental outcomes of their policies, platforms and programs, neither of these institutions have structures or missions that are capable of addressing the root causes of social poverty and practices that are environmentally unsustainable. They support the monetary system. The main contradiction within their responsibilities and roles is the ideal and belief that capitalism and democracy will deliver and the plain fact that it does not.

Particular sectors, industries and locales of capitalism have a common interest in growth, competing with substitute products, services, sectors and local economies. While capitalists compete with one another to gain a higher proportion of the profits, the growth of economic activities as a whole is of interest to all, including the state. The developed country democracies that burgeoned during the twentieth century did so mainly in terms of economic growth, which has been our key measure of the success of national economies and the economic indicators relevant to any particular sector.

Growth is a peculiar indicator at both individual and general levels. Profits are a monetary claim on the current or future product and, as prices vary and supply is contingent on numerous productive units and management decisions as well as geographic (transport/trade) considerations, its worth is always contingent. This is another reason why all capitalists try to get as much money as possible, as security against market vagaries and failures.

There have been many critiques of the accounting systems that develop Gross National Product (GNP) and Gross Domestic Product (GDP) indicators and adjustments to make the symbol more 'real'. Also it is well recognised that capitalist growth implies imperialism and more intensive capitalism, i.e. turning previously non-capitalist nature and people into capitalist units of production involving managers, workers and consumers. While environmental critiques arguing for a steady-state economy exist, this route is impossible by the very nature of the case. (See 'Limits of current practices and reforms' above). Our common measure of economic activities, in individual, particular or general terms, is capitalist growth. Once the system has been analysed, it is impossible to identify or create any other indicator of the health of the capitalist system. This is because each and every capitalist unit of production has no other measure with which to make key decisions over its management than enhancing the business in monetary terms. Legal and accounting measures of the health of a business, sector or nation are based on its status and potential measured in monetary terms, producing to sell on a market. Other qualitative measures or immediate and direct use-values are marginal to such an analysis.

A religion renames the world, orders thoughts and fits everything into a rigid framework, requiring adherents to follow set practices and rituals in the name of an unfathomable spirit and god who is believed to have supernatural powers of goodness and protection – such is capitalism, the spirit of exchange-value and the god of money.

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