### Economics and Identity

Even today, it is heretical to suggest that economic growth, of which international trade is an increasing part, is constrained by any fundamental limits like the management of the natural capital of the atmosphere.

Andrew Simms in Collision Course, 2000, p. 4

## [a]Sustainability Values not Monetary Value

Economics is conventionally focused on one sort of value: monetary value. One of the guiding principles of green economics is to extend the remit of economics to include a wider vision and deeper values. The US ecofeminist Starhawk has described three principles of ecofeminism which I have applied to economic analysis: these are unity-indiversity, interconnectedness and immanence. The first of these principles describes the need to respect difference and to value the whole as requiring all of its different parts. In the economic sphere this requires diversity of organisational and operational forms rather than the constrained business model our economy is based on today. The second, interconnectedness, is a belief in the inevitable relationship between all these aspects of the planet, a principle which is closely supported by ecology. It is this principle that leads to the holistic policy-making that will be described in Part II of the book. Without it we see an economy where the needs and wants of some peoples and species lead to the suffering and death of others. This arrangement results in conflict and war. The principle of 'immanence' is inevitably somewhat nebulous and is best illustrated by the following quotation where James Lovelock describes how he realised his Gaia hypothesis:

Suddenly, as a revelation, I saw the Earth as a living planet. The quest to know and understand our planet as one that behaves like something alive, and which has kept a home for us, has been the Grail that beckoned me ever since. It came to me suddenly, just like a flash of enlightenment, that to persist and keep stable, something must be regulating the atmosphere . . . My mind was well prepared emotionally and scientifically and it dawned on me that somehow life was regulating climate as well as chemistry. Suddenly the image of the Earth as a living organism. . . Emerged in my mind. At such moments, there is no time or place for such niceties as the qualification 'of course it is not alive—it merely behaves as if it were.

We are only beginning to think through what it might mean to perceive our planet in this way, as something sacred rather than a larder we can raid at will. Some indigenous peoples find mining for oil or coal to be blasphemous because it violates the body of the earth. This kind of respect would mean taking our economic decisions about extraction and use of the Earth's resources very much more seriously than we do now.

Others who are equally committed to creating an economy that respects the planet and all the creatures who make up life on earth would feel intensely uncomfortable with this sort of writing. They tend to focus more on a rational discussion about which sort of values such an economy would be based on. According to Lawson's 'axiomatic basis of green economics': it is impossible to expand forever into a finite space; it is impossible to take forever from finite resources; and everything is interconnected. In his view, applying these axioms would allow a harmonious balance between economics and the ecosystem. The values that we will need to build a sustainable economy as viewed by Jonathan Porritt are reproduced in Box 3.1.

## Box 3.1. Sustainability Values

Recognition of interdependence Self-determination Diversity and tolerance Compassion for others Upholding the principle of equity Recognition of the rights and interests of non-humans Respect for the integrity of natural systems Respect for the interests of future generations.

Source: Porritt, J. (2006), Capitalism as if the World Mattered (London: Earthscan), p. 289.

[!box ends]

---Insert Figure 3.1. 'Three is a magic number' near here----

The three circles model help to explain the different view of the economy that results from taking sustainability seriously. In the conventional view (on the left of the graphic), the economy, environment and society interact but are not interdependent. They are drawn as of equal size and therefore importance, although in reality the economy carries much more sway in decision-making, with society bearing the cost and the environment paying the highest price of all. This figure make clear why economists refer to the negative consequences of production processes—say, pollution from a nuclear power-station-as an 'externality', because in their view of the world what happens to the environment and the people who live in it happens somewhere else. It can be pushed outside the 'economy' circle and dealt with elsewhere. Once you realise that there is not 'elsewhere' you have to consider the wastes you produce in all your economic activities differently. This is illustrated on the right-hand side of the graphic, where society nestles inside the environment and the economy is a part of society. In this view, both society and economy are dependent on the environment. It also has the implication that economic activity takes place within a network of social relationshipsan insight whose implications we will return to later. This is the world as viewed by green economics:

The economy is, in the first instance, a subsystem of human society . . . which is itself, in the second instance, a subsystem of the totality of life on Earth (the biosphere). And no subsystem can expand beyond the capacity of the total system of which it is a part.

If you bear this image of where the economy fits in mind, it helps to make sense of the interpretations of different economic issues and the policies proposed throughout the rest of the book. The following section explains why the outer circle, the environment, is fixed and therefore the inner circle, the economy, must be also. Then I move on to consider the link between economy and society before considering, in the next section, the implications of regrounding the economy within the environment. The final section considers the practical implications of this understanding through a brief consideration of permaculture.

[!box]

## [a] The Guiding Vision: Balance not Growth

If you take only one idea away from an introduction to green economics such as this it should be that green economics is opposed to continuing economic growth. Even those environmentalists who mingle in exalted political circles, such as Jonathan Porritt, are clear that 'sustainable growth' is a 'self-evident oxymoron'. If you say this to a conventional economist he will throw up his hands in horror and consider you a lunatic—or perhaps a blasphemer. As Richard Douthwaite has pointed out, growth is the *sanctum sanctorum* of conventional economics:

It is not the results of growth that are important to the people who make it happen. What matters is the process itself; and the more of that process there is, the better politicians and business people like it. Growth means change. More rapid growth means even more change; more change means more market opportunities to be turned into profits. And more profits are not only the system's motivating force but the source of the financial resources needed for it to grow faster still. For a company director, corporate growth creates a virtuous circle with increased profits leading to increased investment leading to more growth, more profit and more investment still.

However, as Douthwaite makes clear, growth is necessary to a capitalist economy, not to any economy.

-Insert Photo 3.a. 'Happiness is just around the corner cartoon' by Polyp near here-

So in its own closed worldview and on its own terms this growth may appear unproblematic, but since it lies at the heart of the existing economic system, economic growth touches on many other aspects of our life—and our world. For example, we measure our economy in terms of GDP, a measure which is based on a narrow range of economic activity, so that what is growing may not be something that increases even human well-being, not to mention the well-being of the planet. The limitation of this method of measurement, and the consequences it has for the economy in general, is discussed further in Chapter 7. Growth is often argued to be necessary for the 'creation of jobs', another key objective of our economy now which is questioned by green economics. The most fundamental reason why we need economic growth is because of the way our money is created—this system, why we need to change it, and how we could make sustainable money form the themes of Chapter 5.

But for now we shall spend some time just exploring the call for an end to economic growth itself. It may seem fairly obvious to the uninitiated that we share one, small planet, and that, since our environment is limited, so should our economy be. But to an economist this is not obvious at all. Human ingenuity can find ways of using resources in infinitely more efficient ways, allowing us to expand for ever. We saw in Chapter 2 that Georgescu-Roegen was the first economist to apply the principles of thermodynamics to economic thinking—a science that was only developed 50 years after economics itself. The second law, also known as the entropy law, defeats the economists' optimism. The reality is that the apparent efficiency is only exporting the problem to somewhere else within the system and the longer it takes us to face up to the reality of the limits we live within the more serious the problem we are storing up for ourselves.

This change in thinking emerged first in the environmental movement in the 1960s and came to public attention towards the end of the decade via the Report to the Club of Rome called *Limits to Growth*. This report drew attention to the exponentially

increasing exploitation of resources and argued that this, or the parallel increase in waste generated, would destroy the environment unless it were halted: the limits it identified were those of resource depletion and waste overload, linked to a concern for the rising population and the need for a parallel increase in food-growing. The Report was, as would be expected, lambasted by the political and economic establishment, but it set the scene for the rise of environmental concern and its link with economic activity. The authors of the report produced an update in 2004 including a useful summary of their argument:

Our analysis did not foresee abrupt limits—absent one day, totally binding the next. In our scenarios the expansion of population and physical capital gradually forces humanity to divert more and more capital to cope with the problems arising from a combination of constraints. Eventually, so much capital is diverted to solving these problems that it becomes impossible to sustain further growth in industrial output. When industry declines, society can no longer sustain greater and greater output in the other economic sectors: food, services and other consumption. When those sectors quit growing, population growth also ceases.

Because of the addiction to growth demonstrated by globalised capitalism the rejection of it is somewhat rhetorical. We can, of course, accept that there will be a need for more economic activity in the world's poorer countries to enable an acceptable standard of living. Even in the developed economies of the West, we can enjoy more of certain types of activities; it is the ones that are profit-driven and fuelled by fossil fuels that will have to be curtailed. Douthwaite has produced a list of the types of growth that are compatible with a sustainable economy and these are reproduced in Box 3.2.

[!box]

## Box 3.2. Douthwaite's Criteria for 'Green' Growth

Growth is acceptable if it can be achieved without:

- Reducing the number of people employed
- Increasing the amount of energy and raw materials used
- Using more transport
- Shifting the distribution of income in favour of the better off
- Releasing genetically engineered organisms into the environment
- Patenting life-forms
- Using technologies that make working less interesting and fulfilling
- Increasing the amount of waste that goes into landfill or into the environment
- Driving smaller firms out of business or damaging local economies
- Allowing chemicals which are not quickly and harmlessly broken down into safe and stable constituents to leave factories
- Purchasing from parts of the world where prices are subsidised because environmental, social or working conditions are significantly inferior to those in the countries they are supplying
- Increasing human, animal or plant exposure to nuclear or electromagnetic radiation
- Making production and supply systems less sustainable

*Source*: Douthwaite, R. (1999), 'The Need to End Economic Growth', in Scott Cato, M. and Kennett, M. (eds.), *Green Economics: Beyond Supply and Demand to Meeting Human Needs* (Aberystwyth: Green Audit).

#### [!box ends!]

So what do greens want instead of relentless growth? The answer is a balanced economy, what is usually referred to as the steady-state economy. This was the call of Herman Daly, a student of Georgescu-Roegen who launched the ecological economics movement. The popularity of such a call amongst the orthodox economists can be guessed from the following quotation from Adam Smith: 'The progressive state is in reality the cheerful and the hearty state to all the different orders of society. The stationary is dull; the declining melancholy'. In fact, from the perspective of green economics it is anything but. As discussed in the final section of this chapter, within a limited planet and without the optimistic assumption of conventional economics that technology can act as a substitute for natural capital, we are required to show ingenuity and creativity in developing new systems that mimic nature and live in balance with the ecosystem. This 'circular metabolism' to replace the linear, progressive economy 'aims to re-use and re-circulate resources'.

More than 20 years ago James Robertson made a distinction between the HEeconomy which was Hyper-Expansionist and the SHE-economy which was Sane, Humane, and Ecological. The contrasting characteristics of the two are presented in Table 3.1.

HE	SHE
Quantitative values and goals	Qualitative values and goals
Economic growth	Human development
Organisational values and goals	Personal and inter-personal values and
	goals
Money values	Real needs and aspirations
Contractual relationships	Mutual exchange relationships
Intellectual, rational, detached	Intuitive, experiential, empathetic
Masculine priorities	Feminine priorities
Specialisation/helplessness	All-round competence
Technocracy/dependency	Self-reliance
Centralising	Local
Urban	Country-wide
European	Planetary
Anthropocentric	Ecological

 Table 3.1. Comparison between the HE (hyper-expansionist) and SHE (sane, humane, ecological)

 possible futures

Source: Robertson, 1985.

-Insert photo 3.b. 'ball and chain economy' near here-

## [a]Economics and Relationship

So far in this chapter we have had principles and axioms and visions. We have not so far heard very much about people. This is fairly typical of writing on economics—and in fact

most economics writing is much more cold and technical than this. Academic economics is stuffed full of formulas and arcane mathematics and in universities economics is often found in business schools these days, rather than in the social sciences faculty. But economics is fundamentally about people: how they work, what motivates them, what they enjoy spending their time doing. These are social questions which it is artificial and misguided to consider in the scientistic way that most economists do. One of the key differences about green economics is that it puts people back at the heart of what economies should be about. And when it comes to everyday economics—the sorts of transactions we engage in every day of our lives—green economists encourage a system based more on relationship.

One aspect of this approach is to question both the spread of the market, and what we mean by the market. In an earlier book called *Market, Schmarket* I cast a sceptical eye over the claims of the neoclassical economists that the market is the most efficient way to organise our economic lives, not to mention other areas of our life such as care and even relationships and voting. Other theorists of the green economy are keen to draw a distinction between 'capitalism' and the 'market': economics relates to the organization of relationships between the state, the market and community, and the green worldview sees the state and market as mechanisms to achieve what people want, rather than people being subject to the dictates of the market. The French proponents of *decroissance* or 'degrowth', for example, talk about 'putting the economy back in its place'. Green economists differ in their view of how much of our economic life would be mediated by the market, although for most entrepreneurialism will still play a role.

Although most green economists would see the sustainable economy as involving considerably less trade, and the revival of local economies, green economics is not about cutting ourselves off from each other, either within nation-states or globally. Only the most extreme would seek the eco-anarchist vision of tiny, rural self-sufficient communities. Rather we are calling for a humanising of economic relationships. It can be argued that the late capitalist economy has reduced human beings to their economic function—we are merely production and consumption units. In a green economy people would relate to each other first and trade with each other second. Drawing on studies of markets in Africa, as well as the *agora* of ancient Greece, markets are seen as places of sociality and joyful companionship, where news and political views are exchanged as well as goods and money: "The *agora* is first and foremost a place of public life and civil society".

#### -Insert Photo 3.1. 'Bioregional hat' near here-

I recently made a purchase which seems appropriate for this kind of convivial economy. I spent a weekend on a basket-making course with a local craftswoman. As well as working with willow from the Somerset levels and hedgerow materials that she grows herself she also makes an annual trip to the river some 50 miles north of where we live to cut rushes. These she dries and prepares and uses for seat-covering and weaving into hats. My mass-produced, charity-shop straw hat wore out last year so I needed a new one and was able to buy one of hers. The sense of relationship with that hat, its connection to my local environment, knowing the person who made the hat, and admiring her skill are all side benefits of the purchase that cannot be counted in monetary value. The delight I feel when wearing the hat cannot be expressed in words. It does so much more than protecting me from sun-stroke!

Such an account is so distant from the culture, methodology and ideology of neoclassical economics that I hesitated to include it in this book for fear of undermining its authority. However, as Douthwaite makes clear, the fact that economics uses a narrow

lens when focusing on the world is only because of its wish to achieve scientific accuracy, not because that is the best means of explaining how economic relationships actually work:

Economists are forced to ignore the possibility that irrationality, prejudice, love, community solidarity, idealism, upbringing, and even enlightened self-interest might help explain the way people behave because, if they abandoned their twin simplifying assumptions of rationality and pure self-interest and let some or all of these other possible factors stay in the picture, the world would remain so complicated that they would not be able to say anything definite—and they hope, useful—about it. In many cases, of course, their simplifications seem to work in that they enable them to predict what will happen with reasonable accuracy. However, it is a grossly unwarranted step to go on to say, as most economists do, that the real world ought to be modelled on their simplified theoretical one in order to be efficient and that any actual system, action or outcome which does not accord with what they would have advised under their assumptions is sub-optimal.

The aspects of economic life that are excluded from a conventional analysis are just those aspects which would come to the foreground in a green economy.

The three properties identified by David Fleming as essential to a sustainable (he would say 'lean') economy are 'self-distance, play and accomplishment'. 'Self-distance' is a concept taken from Richard Sennett. It refers to the way that successful communities have rules about how much self-revelation is appropriate. It is a sign of our culture's incapacity for genuine closeness in social relationships that we feel the need for confessional TV and sometimes excessively confessional relationships with friends too. The concept of 'play' picks up the slogan of the Transition Towns about 'living experimentally', not being too afraid of making mistakes or getting things wrong. With his notion of 'accomplishment' Fleming is suggesting that being a successful citizens requires practice and takes determination and will, an expenditure of energy that is merited by the return of living in a thriving community. 'Without it, forget the solar panels and local food. If the local economy, the community, can produce accomplished music, dance, celebration, it will have a chance.' He argues that for the achievement of these qualities the public sphere is central: 'It is the place where a community's culture *happens*.

## -Photo 3.2. The Convivial Economy near here-

Such a convivial economy can only be possible if the market is relocalised since personal relationships cannot be maintained across the globe. More importantly, the relationships we do have with the manufacturers of products in China and Bangladesh are exploitative, since wages in those countries are at a level that would be illegal within our own societies. While green economics is not ideologically opposed to all global trade, and welcomes cultural and personal exchange, we need to ask searching questions about the justice of those relationships. The imbalance is reflected not only in vastly different levels of wages but also in terms of resource use, as illustrated in Table 3.2.

	USA	Europe	China	India	Asia	Africa	Latin & Central America	World
Passenger cars per 100	750	240	7	6	20	9	56	91

**Table 3.2.** Indicators of consumption and population in different regions of the world (2004/5)

people Annual petrol and diesel consumption (litres per	1624	286	33	9	47	36	169	174
person) Energy consumption p.a. (kg. oil equivalent)	8520	3546	896	515	892	580	1190	1640
Annual $CO_2$ emissions per person (tonnes)	20.3	8-12	2.7	0.99	<1	<1	<1	3.85
Annual meat consumption (kg per person)	125	74	52	5	28	13	58	40
Daily water consumption (litres per person)	430	159	135	174	172	47	147	173
Population	293	730	1306	1080	3667	887	518	6500
Children born per woman	2.08	1.56	1.72	2.78	3.1	4.82	2.75	2.55

Source: Pretty, J. (2007), The Earth Only Endures: On Reconnecting with Nature and our Place in it (London: Earthscan).

# [a]Re-embedding Economics in Nature

As we saw at the beginning of this chapter, from the perspective of mainstream economics, economy and environment are separate spheres; they overlap when environmental resources are 'exploited' to produce goods that can be sold, but they are not mutually dependent. From a green economics perspective this separation is the heart of the problem. Recent human history has been a story of increasing disconnection from our environment or from 'nature'—both in the sense of the beautiful planet which we share and in the sense of our own intrinsic nature as an integral part of the complex web of life on that planet. This sort of thinking might find space within a book on ecology, but never within a book on economics. This distance from the natural world is the source of the environmental crisis:

What a terrible indictment, to have a culture that prides itself on its distance from the natural world and the natural cycles and rhythms, that regards its mission as needing (in Francis Bacon's words), to conquer and subdue nature with its indomitable technology, and that is built on the idea that nature has value only if it is harnessed and exploited for economic purpose: 'Nature, Mr. Allnutt', says the spinster on the *African Queen*, 'is what we have been put in this world precisely to rise above'.

In his book *Soil and Soul* Alistair McIntosh presents a lyrical account of the dislocation of humanity from nature and of the consequences this has for politics and economics. Jules Pretty goes further, providing an appealing vision of a reconnected human community, which has relearned its 'agri-culture' and found again its place in the landscape.

For the ecofeminists, this disconnection between people and their planet is directly related to the economics of the 'rational economic man' which they consider to 'be written by men about men, ignoring women's work and women's issues'. This is not only unjust, but also dangerous:

The core argument of ecofeminist political economy is that the marginalisation of women's work is ecologically dangerous because women's lives as reflected in domestic and caring work represent the embodiedness of humanity, the link of humanity with its natural being. . . Ecofeminist political economy argues that the capitalist market is disembodied and disembedded, carved out of the totality of human existence within the natural world. Through the analysis of women's work

it shows how the dualist 'economy' fails to acknowledge its true resource base and the way it is parasitical upon sustaining systems, including the environment. As a result these are exploited and damaged.

The ecofeminists argue a link between the way in which men deny their dependence on women through patriarchy and the way the economy denies its dependence on nature. In the individual case this is represented by our denial of our bodily existence, which leads to physical ill-health as the denial of dependence on nature leads to environmental ill-health. In the words of Teresa Brennan: 'nature is the source of all value, and ultimately of all energy, but the inherent dynamic of capital is to diminish this value and this energy in favour of time and technology.' It is not that women have an essential link with nature but more that their work, such as domestic and caring work, in Mary Mellor's words, 'represents the embodiedness of humanity, the link of humanity with its natural being'. Maria Mies and Vandana Shiva go further still, arguing that there is a specific link 'between patriarchal violence against women, other people and nature'. The value system of conventional economics specifically denies the value of the body, the planet and female aspects of life, as illustrated in Table 3.3.

Highly valued	Low/ no value
Economic 'Man'	Women's work
Market value	Subsistence
Personal wealth	Social reciprocity
Labour/Intellect	Body
Skills/Tradeable Knowledge	Feelings, emotions, wisdom
Able-bodied workers	Sick, needy, old, young
Exploitable resources	Eco-systems, wild nature
Unlimited growth, consumption	Sufficiency

Table 3.3. Valuation of Activities and Functions Within the Patriarchal Economy

Source: Mellor, M. (2006), 'Ecofeminist Political Economy', International Journal of Green Economics, Volume 1, Numbers 1-2, pp. 139-150.

# [a] Not Squaring the Circle but Closing the Loop

Sometimes, as when you hear the phrase 'sustainable development', you can question whether the attempt to achieve sustainability within the existing paradigm is possible at all. It does feel like trying to square the circle, trying to build something different and better with existing tools and within the existing mindset. The system of thinking that grows out of permaculture is a route out of this impasse. Permaculture arises from a recognition of the earth as a limited system; although it began as a system of sustainable agriculture that respected ecology, its way of looking at the world has relevance to the economy as well. It relies on a sequence of design principles that can be applied with local variations to generate sustainable, self-sufficient communities. According to the Permaculture Research Institute of Australia, 'The philosophy behind permaculture is one of working with, rather than against, nature; of protracted and thoughtful observation rather than protracted and thoughtless action; of looking at systems in all their functions, rather than asking only one yield of them; and allowing systems to demonstrate their own evolutions.'

-Insert Figure 3.2. 'Permaculture illustration' near here

The most important principle from permaculture that can be applied to the economy is the closed loop, or closed system:

# Closed systems. It is here that the solution lies. And closed systems will take the form of local organisation, local economies. There will be no alternative. They will not be able to buy-in their needs, to import their way out of trouble. Local lean economies will not simply be a good idea; they will be the only option.

Let's take the example of biofuels. As soon as biofuels were seen as a solution to climate change they became a promising investment opportunity for venture capital. Farmers, too, moved rapidly into this new market as a means of maximising profit from their land. The movement of vast areas of the earth's fertile soils from food to fuel production has-when combined with reduced crops due the consequences of climate change and an increasing population with more land-intensive demands-led to rapid increases in global food prices. The consequences of biofuel production for the environment, especially the remnants of rainforest, have also been stark. This is the result of an open-loop economy, where all productive land is a piece in a giant global monopoly game. By contrast, if my local community decides that some of its land should be transferred to the growing of oilseed rape for the production of diesel to drive our tractor we will have to consider the consequences of that for our food production. We might well decide to use the tractor less. We will be experiencing the consequences of that decision within our own system. Similarly, if the only diesel available were that produced within our community we would be careful to recycle all used vegetable fat into biodiesel—a process that is rarely profitable on the scale at which it is feasible.

Rainwater harvesting is another example of a closed loop. In 2007 the UK experienced some of the worst floods in living memory; they were largely the result of poor water management, combined with the increased intensity of rainfall due to climate change. Gardens and open spaces had been paved and tarmacked, allowing no possibility for the rain to be absorbed. The irony was that, because water pumping stations are located close to rivers, a large one in Gloucester was flooded and had to be shut down for fear of electrical explosion. This meant that in my village and surrounding areas some 300,000 were left without water while the heavens continued to provide it in abundance. We were instructed not to use bottled water to flush toilets, which led many to realise that in fact we do exactly that every day-purifying water to drinking quality and then sending it down the sewer. This is the linear economy approach to domestic water supply. Experts estimate that 90% of the water being piped into homes and sent out via sewerage is unnecessary. We could simply circulate water from roofs into underground storage tanks and around our domestic systems, which would also reduce the pressure on drains in times of heavy rainfall. The problem with this is for the water companies, who make their profits by charging us for delivery and removal of water.

## - Insert Figure 3.3. Rainwater harvesting system for a domestic property near here-

In the years since the Second World War in the more developed economies of the world the exploitation of land for growing food has gradually been organised more along the lines of a capitalist business, demonstrated by the use of the term 'agribusiness' to describe it. The culture of competitiveness, profit maximisation and short-term thinking has replaced the traditional values of land management. This has had horrendous consequences for the natural world that we live within: species have become extinct, soil fertility has declined, and the landscape has been turned into a monocultural wilderness that fails to feed us both literally and figuratively. A green economist might suggest that we reverse the process—not only should we relearn the culture of care for the land but we might also use an approach of care and protection for our industries. If we really wanted to 'green business' adopting the culture and thought processes of permaculture might be a good way to start. The use of the phrase 'rainwater harvesting' gives us a clue that we might already be moving in that direction.

In these two brief chapters I have done my best to give you a sense of the antecedents of green economics. It has an eclectic range of influences and styles, which is consistent with the diversity it would seek to restore to our economic life. The three chapters that follow address three key economic themes—work, money, and business—and offer guidance as to how green economists are rethinking these issues in ways which offer us a vision of a sustainable future.