

The Harmony Economy

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The monumental misconception

In December 1968 Apollo 8 blasted into space to begin its historic mission and to be the first manned craft to orbit the Moon. On Christmas Eve the astronauts witnessed a blue and white Earth emerging across the horizon of a lifeless Moon and at the end of a live broadcast to the people of Earth they took turns to read from the Book of Genesis. They captured a scene never before viewed through human eyes in a photograph that would later come to be known as *Earth Rise*.

Even then back in the late 1960s human impacts on the Earth were visible from space. Since then the scale, scope and rapidity of change has accelerated. Compared with 1900 we are now using ten times more resources each year and five times as much compared with 1960. The concentration of greenhouse gases in the atmosphere has risen dramatically, not least because of the five-fold increase in energy demand since 1950, and it continues to go up. The level of carbon dioxide in the atmosphere is now higher than at any time in at least the last 800,000 years.

Because of habitat loss, driven largely by intensive farming and deforestation, a mass extinction of animals and plants is underway, and on a scale not seen on Earth for 65 million years. Serious soil damage now affects about third of the agricultural land, threatening food security and a third of the land is at risk of turning to desert. Toxic chemicals have spread through food chains even in the remotest corners of our world. The global wild marine fish catch peaked in the early 1990s and nearly all stocks are now either at their maximum yield, are severely depleted or have already collapsed.

All this and more is the result of several related factors, including a fast-rising human population. The number of people has nearly tripled since 1950 and is now at over seven billion and projected to go over nine by mid-century. More important even that this fundamental change is the rapid expansion of the economy, which has increased in size more than ten-fold since 1950. That has led to an increase in average per capita income, in turn accelerating the rate of consumption and demand beyond that caused by population increase alone. At the same time, however, inequalities have grown, both within and between countries to the point now where the richest segments of people on average consume ten times more resources than poorest.

While we cannot predict the possible futures that lie before us, one thing is for sure, and that is how we cannot carry on as we are. Even if we believed that the destruction of the natural environment, degradation of natural processes and the exhaustion of natural resources is a price worth paying for progress, the fact is that our present version of progress will at some point stop. This is because our economy is 100 per cent dependent on natural processes. Even hedge fund

managers need food, water and air, all of which are replenished by natural systems such as soils, oceans and forests.

None of this is particularly new, however, and we must ask why it is that after all the expert reports global summits and political promises is it that we continue to travel so decisively in the wrong direction? There are of course vested interests resisting change, such as the fossil fuel companies who would be losers in a world taking serious action on climate change. Deep social inequalities also block progress, with the rich and poor blaming each other, either for inaction or for causing problems they are unwilling to solve.

Recently these and other blockages have been compounded by how in some countries environmental discussions have become polarized on political party lines. The political left has sought to own 'green' issues and to attack the right on its failure to deal with them. Many on the right have reacted by denying there is even a problem in the first place.

Then there is our economic system itself and the extent to which growth in GDP is blind to the ecological consequences of our present approach to development. This is exacerbated by the continuing poverty that causes governments to prioritize growth over sustainability.

This is not an ideal springboard from which to launch global efforts toward resolving ever-deeper ecological tensions, but considering how most of the blockages to reaching solutions are economic in nature we do at least know that it is likely to be within economic policies that solutions might lay.

We have more and more information as to the basic ecological realities we inhabit, revealing how one of the most monumental misconceptions of our time is the idea that there is somehow a choice between economic development on the one hand and sustaining nature on the other. The misconceived assumptions that propel us down the destructive path we are presently embarked upon are familiar enough, and regularly repeated by leaders from business and politics.

While environmental damage might be regretted, they say, it is the price of progress and thus is inevitable. Take for example the narrative developed by former British Chancellor George Osborne, who has pointed out on several occasions how environmental goals need to be scaled back to promote more growth in gross domestic product.

Nature's real economy

This is, of course, quite the wrong conclusion to reach. For some time, and during the last decade in particular, researchers have investigated the dependence of economic systems on ecological ones, and in the process have generated some striking conclusions. While many mainstream economists suffer from the kind of delusions that make it perfectly rational for them to accept the liquidation of natural systems in the pursuit of growth, different specialist studies reveal the huge economic value being lost as decisions and policies that are geared to promoting economic activity degrade the services provided by nature.

For example, as we struggle to cut emissions from fossil fuels, including via very expensive nuclear power stations, one study estimates that the value of the carbon capture services which could be gained through halving the deforestation rate by 2030 is around \$3.7 trillion. And the wildlife in the same forests has huge economic importance too – about 50 per cent of the United States' \$640bn pharmaceutical market is for example based on the genetic diversity of wild species, many of which were originally found in natural forests. And it's not only the genetic diversity in wildlife that brings economic benefits, so do the relationships between different species.

Among other things, wildlife also helps to control pests and diseases. The cost of losing India's vultures has been estimated at \$34bn, largely because of the public health costs associated with their demise, including increased rabies infections. The annual pest-control value provided by insectivorous birds in a coffee plantation has been estimated as \$310 per hectare while the annual per hectare value added from birds controlling pests in timber-producing forests has been put at \$1,500 (and that was in 1984 prices!). Great tits predating caterpillars in a Dutch orchard were found to improve the apple harvest by 50 per cent.

The services provided by animals, such as bees, undertaking the pollination work that underpins about one trillion dollars-worth of agricultural sales has been valued at \$190 billion per year.

Marine ecosystems are generating massive economic benefit as well. The GDP value derived from marine fish stocks and the industries associated with them are about \$274bn per year – and this could be worth another \$50bn if fish stocks were managed more intelligently. But even these huge numbers are dwarfed by the wider value of the marine and coastal systems, in protecting coasts from storms, in taking carbon dioxide from the atmosphere and replenishing its oxygen levels. The value of these and other ocean-based services have been estimated as worth about \$21trillion per year.

For individual countries, the services provided by the marine environment can underpin a considerable proportion of their GDP. One study, from the World Resources Institute and WWF, found that at least one-quarter of the GDP of Belize is reliant on its coral reef and coastal mangrove forests.

And then when one comes to how much the degradation of Nature is costing the global economy a study by Trucost estimates that is already about \$6.6 trillion per year (11% of world GDP) and on present trends will reach \$28 trillion by 2050. In contrast, a study from a group of leading conservationists suggests that to meet global goals that would avert a mass extinction of species would cost around \$76 billion per year – or 0.12% of annual world GDP.

With these kinds of estimates in mind, and considering the extent to which healthy ecosystems sustain economic activity, it is remarkable how in many political and business circles the view still prevails that steps to conserve and sustain Nature are regarded as barriers to growth and harmful to

competitiveness.

The simple fact is that looking after Nature is an unavoidable prerequisite for sustaining economic development. Some more enlightened companies have realized this, and are changing their strategies as a result. Some countries too, including Guyana and Costa Rica, have worked out that their natural systems are the basis of their wealth and are acting to protect them. So sustaining Nature is not about protecting the environment, *it is about keeping the economy going*.

Most economists and economic planners have at best become used to seeing nature as supplier of resources and dump for waste, and at worst its protection as hostile to development, we have reached the point where we must urgently recognize that Nature is vital a supplier of essential services and our greatest ally in securing human needs indefinitely into the future. That conclusion is based not only on a great deal of ecological science, but also a huge body of economic evidence.

So with this rather fundamental realization in mind, what must be done? It seems to me that the only logical conclusion is to say that we need to build a new kind of economy, one that is harmoniously embedded in natural systems, to replace the present one that cannibalizes them. We can do this, we have all the tools, and if we use them wisely we can at the same time as crafting a new ecologically harmonious economy generate social benefits. So what is in the toolbox?

The toolbox

One fundamental set of tools that have been talked about for years, but rarely used to shape policy and investment choices, are new metrics of progress. So long as we base our decisions on seeking growth that is measured largely in terms of how much energy and resources we are using up, and regarding more of that growth as good, then the harder it is to align ecological and economic goals. We know it is possible to measure the carbon and resource intensity of wealth creation, to measure levels of contentment and wellbeing and to know changing levels of inequality. If all these things were measured and reflected in economic progress, then other tools could come in to improve the quality of outcomes. These include ecological taxation.

Ecological taxes charge for pollution and waste while giving governments the opportunity to cut taxes on income. Such a shift in where taxes are levied across the economy not only encourages changed behavior and altered investment choices, but can also be used to reduce economic inequalities. This is because it is richer members of societies who generally use more energy and resources while it is those on lowest incomes who'd benefit most from reduced tax on their income. A focus on carbon taxes is an obvious place to begin.

Changing how subsidies are spent can also create momentum for positive change. Governments are presently allocating more than a trillion dollars per year (a thousand billion) to back fossil fuels and agriculture. This is leading to

large-scale environmental damage, including soil loss, wildlife being wiped out and is of course locking countries into continued dependence on high-carbon fuels. All this is in turn already leading to massive economic costs, but these are not reflected in the continuing choice to back destructive practices. We could redirect these subsidies to encourage regenerative agriculture, renewable energy and energy efficiency, in the process driving research and job creation while meeting fundamental needs.

Regulations can be developed (and in some cases already have been) to encourage investment and research and development into new technologies and sustainable practices in farming, fisheries and forestry. These need not be cumbersome or bureaucratic, but can still give clear signals as to the long-term direction of travel. For example energy efficiency labeling regulations applied to consumer goods has driven a market for more efficient fridges, freezers and cars.

Finance to invest in the sustainable industries that can deliver these and other greener consumer goods can be deployed by the issuance of different kinds of green bonds. These provide a return for investors but on the back of ecologically more benign businesses.

There is the opportunity to develop more schemes that reward sustainable behavior via payments for ecosystem services (PES schemes). Such schemes could for example reward farmers for looking after the land in ways that reduce flood risk and which protect water resources. Water companies are already doing this in some places and finding it can be a highly cost effective way of delivering what consumers want while improving the state of the environment.

Private sector companies can build new business models, for example those that support increased income for smallholder farmers, in the process leading to a more secure supply of commodities at the same time as protecting forests. This is already beginning to happen in relation to coffee, cocoa and some other crops. By helping farmers to produce more they can get more from the same land, leading to a reduced need to clear forests to open up more.

On top of these are new conceptual frameworks, including the idea of 'natural capital'. While controversial in some circles, the idea that healthy Nature comprises a set of valuable assets from which a flow of benefits can be derived is a very powerful one for businesses, policy makers and investors. If decision-makers in these spheres can see that value is being lost as Nature is degraded, then different choices will be made. This is already happening in some sectors, especially water and food and in some places is beginning to shape public health policy.

The idea of natural capital also helps us to see how when compared with how we look at finance there is a big disconnect with what we regard as acceptable behaviour in relation to Nature. If we ran financial structures in the same way we treat ecosystems, the people doing it would be sent to jail.

Ponzi schemes are financial frauds whereby capital is paid out to investors as if it were a return derived from wise allocation of finance. The investors only find out that they have lost their money when the capital runs out and the illusion inevitably comes to an abrupt end. So it is with soils, forests, grasslands and biological biodiversity. We run down these capital assets and at some point the flow of benefits we derive from them will stop, in the process bringing economic consequences.

We can fix this if we wish, but rising to the challenge of aligning human demands with what nature can indefinitely supply requires a big injection of political will and leadership from private sector companies. The fact that this is simply not there is demonstrated in how governments quickly mobilized stimulus packages worth more than \$3 trillion in response to the 2008 financial and economic crisis, but thus far devote comparatively miniscule (and in places diminishing) effort to the protection of nature-based assets.

So what must be done?

Emerging priorities

As debate continues to explore how it will be possible to achieve a sustainable accommodation between rising human demands and the capacities of our finite planet, it has become ever more clear that making our existing economic system less bad will not be sufficient. Analysis in relation to carbon emissions and climate change makes the point.

A still rising population, economic growth and rising living standards will mean that the kind of incremental change backed by most countries and companies simply won't be sufficient. For example, we will need by mid century (and earlier to have a chance of capping the average global temperature increase to below 1.5 degree Centigrade) the complete decarbonisation of economies. The way things are going, however, to achieve this we'll have to enter a period of net *negative* carbon emissions and to have more being removed from the atmosphere than is being released. The chances of that happening without changing the fundamentals of how economic signals and structures work are, to put it mildly, low.

This in turn will require the building of a wider consensus as the depth of change required. This strategic need can be advanced by communications and awareness-raising among key constituencies such as national finance ministries, university economics departments and business schools. Jargon-free outreach to public audiences is also necessary.

That jargon-free communications also needs to be backed by clear, compelling and evidence-based narratives. These need to be delivered in part via positive examples of practical changes taking place. This is needed to take the debate beyond remote and theoretical debate between experts and to reveal the vision of the possible futures we might embrace, to show how it is possible to go beyond business as usual.

All this will need to work in the context of the disastrous political polarization that has built up during recent years, especially in relation to climate change. Ideas and mental frames must be identified to help to heal this inability for people to communicate with one another. A critical part of this will be through taking the economic discussion beyond the left-right political spectrum that shapes so many choices.

Making progress in this fraught space will require neutral conveners and new kinds of messages and messengers. Through discourse analysis and dialogue it will be possible to build positive narratives that begin to remove resistance for change and to open new opportunities for progress. This must include careful consideration of key ideas and concepts. For example, will it be best to present the new economy as one that is based on zero growth, or one that is growing more things than simply crude measures of GDP, including environmental quality, health and happiness?

Conceptual vehicles are also needed to carry new ideas further than would otherwise be possible. The notion of a 'circular economy' is gaining traction among companies and has the potential to help propel the new economy into the mainstream via products and new business models. The circular economy mimics Nature's economy, there is no waste, only resources for new cycles of consumption, both in terms of materials, such as metals, and biological nutrients such as phosphorous.

The emergence of circular patterns of production and consumption will contribute to a sustainable and renewable economy derived from a new industrial revolution. There is good reason to believe that this revolution is already gathering momentum, with new approaches toward job creation and prosperity based on among other things renewable energy technologies, restoration of ecosystems, biomimicry, zero waste industrial processes, new materials and green biotechnology. The question is, will it go far enough and fast enough?

Part of the answer to that question is down to the extent that various organizations seeking deep shifts in economic ideas can achieve their goals. Among these actors are the University of Cambridge Institute for Sustainability Leadership that in 2015 launched its Rewiring the Economy programme. The Ellen MacArthur Foundation was established to advance the idea of circular economies, and the New Economics Foundation is working to stimulate new out of the box new thinking.

The final answer will probably not, however, be found only in good advocacy, networking, coalition building and carefully framed narratives and arguments: we'll also need philosophy and culture that are fit for purpose.

[Philosophy for new economics](#)

At the heart of the disconnection between ecology and economics is what might be described a crisis of perception. This crisis has emerged from our increasing inability to see our context as it truly is, and how we and our societies are utterly and completely embedded in Nature. We can't change that reality, but we can – and must – change the economic systems that are one of the main ways in which humans relate to the ecosystems and natural services that sustain us.

Seeing that we are in Nature, and indeed *are* Nature, is a key prerequisite for this, leading to several logical conclusions as to the evident challenge for education and culture. If we can't heal this disconnection, then we should expect to pay a very high price, in both human and economic terms, as well as environmentally.

This is a long-term goal but one that in our increasingly urbanized world needs to be prioritized now, alongside more technical and practical tasks. Designing green spaces into cities so that people can experience Nature every day, environmental education in schools and different communications from companies to consumers are all part of the picture.

The new agenda

The longer we continue to disregard the roles played by natural systems in meeting human needs and to build our economic castles on foundations of sand, the bigger the costs that will fall to future generations. While we might enjoy some comfort now as we degrade and plunder Nature, it is our children and grandchildren who will pay for our lazy-minded liquidation of the services that maintain the conditions essential for peoples' wellbeing. If we wish to avoid paying that price then we must lift our eyes to embrace a more ambitious vision for our collective future.

Can we imagine a world in which climate changing emissions have been eliminated, large areas of forests and other natural habitats on their way to recovering while at the same time finding the means to ensure that 9.5 billion people are all housed, educated and fed? Can we achieve the kind of inclusive development that recognizes how inequality is the most dangerous environmental threat of all? Some people can imagine that world, but can we imagine how to get there?

The answer is yes, although in the process it will be necessary to address what remains an evident crisis of perception, borne of our willingness to believe that we can go on as we are. Fixing this problem is the ultimate communications challenge, and one that has hardly been bettered since Christmas 1968 and that picture which for the first time revealed to everyone on our planet the reality we inhabit.

Alongside compelling new economic propositions, it seems that we must remind ourselves of the message that picture conveyed. It revealed a vibrant living blue and white world suspended in the empty cold blackness of space and how its total self containment means that we really do have nowhere else to go. That fact

is as real today as it was then, only now there are about twice as many people making ever increasing demands. If we are to thrive indefinitely into the future then we need a new kind of economy that changes our relationship with the Earth, from one that is exploitative to one that is regenerative – a Harmony Economy.