

## **A Greenpeace Manifesto for Change**

Living on Earth: Charting a Course for Harmony  
Sophia Centre for the study of Cosmology in Culture

**Inscribed on Karl Marx's grave:**

**“The philosophers have only interpreted the world, in various ways. The point, however, is to change it.”**

## Introduction

This year, the International Union of Geological Sciences is expected to report on the outcome of one of the biggest scientific debates of our time: whether the Earth has entered a new geological epoch. For the last ten thousand years – a period that has seen the birth and flourishing of human civilisation – we have been living through the Holocene. But there is an emerging consensus that this epoch may now be over, superseded by a new age: the Anthropocene. The age of humans.

The reason for this change is stark: human activities are now having such a huge and decisive impact on the Earth that our species has become a geological force. Colonialism, global trade and coal brought about the Anthropocene. The beginning of European exploitation of other continents in the seventeenth century and the Industrial Revolution of the eighteenth century speeded its progress, but the destructive reality of this new epoch has only really hit home in the last half century.

Since 1950 we have seen an unprecedented global rise in the human population, accelerating extinction and climate change, urbanisation and industrialisation and the development of novel materials from persistent organic pollutants to genetically engineered organisms. Extinction rates are currently running at between 100 and 1,000 times the natural level. Even nuclear bomb tests have left their radioactive traces in tree-rings.

But we are conscious agents of the current destruction, and in that consciousness lies hope for the future. We know the damage we are doing, and we know we should and can do things differently. Now our challenge is to agree on how to use our powers for good.

Twenty-eight years ago, the UN's Brundtland Report set out an agenda for global 'sustainable development'; a radical idea at the time. Nearly three decades on, 850 million people still live in abject poverty, and the planet faces continuing degradation of its forests, oceans, and other key ecosystems. Extinction rates are accelerating and topsoil is eroding at record rates. The definition of 'sustainability' that Brundtland laid out – 'meeting the needs of the present without compromising the ability of future generations to meet their own needs' – has clearly still not been embraced.

John Muir, one of the early conservationists, famously recognised that ‘When we try to pick out anything by itself, we find it hitched to everything else in the Universe.’ The last fifty years have only driven home this truth. Destroying the Earth’s great forests for timber, farmland or mining not only reduces species diversity but also removes ‘carbon sinks’ that soak up greenhouse gas emissions, making climate change harder to tackle. Hunting elephants to the brink of extinction in central Africa leads to the loss of tree species in the lowland rainforests, species that need the elephants to disperse their seeds. Forests need animals, people need forests, everything is connected. Yet we have an economic system which acts as if human activities could be detached from the ‘natural resources’ they rely on; as if we were somehow separate from the planet we are part of.

Four centuries ago, at the dawn of the age of science, the Enlightenment philosopher Francis Bacon argued that improving the human condition would require humans to behave like gods; to try and ‘master’ the world. We had to ‘vex’, ‘torture’ and ‘enslave’ nature in order to bend it to our own purposes, he said. The domination of nature became the intrinsic characteristic of modernity. The new society was for the benefit of man alone. Those attitudes still dominate today. They have led us into the Anthropocene. It is those attitudes that have to change now. We should not underestimate the difficulty of this task; nor its urgency and importance.

## **What Is To Be Done?**

Our global economic system reflects the skewed values of our increasingly global and ‘flattened’ culture. Economists today act as if the economy and the natural world were distinct. We hear about ‘growth’ as if it were unlimited and its impacts could be somehow contained within a box marked ‘externalities’. When nature is taken into account, the economists’ solution is to attempt to put a price on it, as if life itself were a subset of the market.

Our economic system places no value either on healthy human cultures or a healthy natural world. Our demand for 'natural resources' and agricultural land degrades and fragments wilderness areas like rainforests. We pollute rivers and seas with agricultural runoff like fertilisers, which deplete oxygen and create huge 'dead zones'. We poison the air and ground with pesticides, wiping out bees and other insects that pollinate our crops. Overfishing, pollution, and carbon dioxide emissions degrade the oceans. The Arctic is melting at an unprecedented rate, and the Great Barrier Reef is bleaching as the seas warm and acidify. These are not just 'environmental' problems – they are indicators of how our economics does not fit with reality.

What is to be done? As John Maynard Keynes said, 'the difficulty lies not so much in developing new ideas as escaping from old ones.' Our political and economic systems are stuck in the past.

There is an urgent need for new thinking from our political class, but they are not rising to the challenge. Around the world, their mantra remains 'grow first, clean up later', as if we were not already teetering on the brink of ecological collapse. Political success today is measured by a leader's ability to run the current economic model, rather than challenge and change it. This is not good enough – and millions more people around the world are saying so loudly every year.

## **From a Straight Line To A Circle**

The last two centuries of industrial evolution have been dominated by a one-way or linear model of production and consumption, in which goods are manufactured from raw materials, sold, used, and then discarded or incinerated as waste. Sixty-five billion tonnes of raw materials entered the economic system in 2010 alone. At one time this model may have made sense, but in a world of nine billion people, it will be a disaster.

What is needed is a move from a linear model to a circular one that maximises the sustainable use of resources, eliminates waste and benefits both the economy and the environment. A 'soft power' economy, less carbon heavy, wasteful and destructive. An

economy designed around all the 'R's: recycling, reuse, refurbishment, remanufacturing and renewable energy as well as R&D.

An economy in which biological waste can be returned to the biosphere through a composting process and back into the soil; the raw material of agriculture.

In which things are made to last, and there is no place for short-lived disposable goods.

In which new models of product ownership make businesses responsible for the whole lifecycle of their products.

In which we would pay the true environmental costs of the things we buy, from extraction to recycling or disposal, rather than dumping those costs on the Earth and on future generations.

In which a remodelled economy would recognise the value of what is sometimes called 'natural capital' – the elements of nature such as land, forests, rivers and oceans that provide us with food, water, energy, clean air, medicines and materials, and other less tangible but equally vital 'ecosystem services' such as pollination, pest control and climate regulation. And that beauty and wonder are real and valuable things in our lives.

Take the world's forests as an example of what such a change could mean. The entirety of the Earth's population, human and non-human, benefits from the world's forests remaining intact. They store water and carbon, stabilize soils, prevent erosion and help cool the planet. In addition, they provide fuel wood and a huge range of other products that can be harvested sustainably without compromising the forest itself. Yet in our current economic system, standing forests are given next to no value. Cut the great rainforests of Amazonia or South-East Asia down, grow some soya beans to feed our pigs and chickens in Europe and China, or palm oil to go in our shampoo, and all of a sudden 'value' is created in a way that our economics can measure.

We need to find a way to value those forests: to value them in a way that doesn't simply see them as 'resources' in a marketplace to be exploited for profit.

For example, we need to pay countries in which these great forests are located to preserve and rehabilitate them - with hard cash, whether public or private. And we need to recognise

the role indigenous people play in protecting forests. Stewardship of forests by people who live in them needs to be recognised and supported by grants of land rights and a proper valuing of the contribution of forest peoples to the health of the planet.

Reforestation must also be pursued, for its value in combating climate change and for its own sake. Sometimes, just leaving forests alone can provide benefits which might have been unforeseen. Many recovering and primary forests can absorb an average of 2 tonnes of carbon per hectare per year, helping to reduce the impact of climate change.

And we need to support local production for local markets, backed up by land reform and investment in agriculture that primarily benefits local people. Abolishing the scourges of hunger and poverty can only be done from the ground up.

## **Our Survival Depends On Soil**

An ancient Sanskrit text reads: ‘Upon this handful of soil our survival depends. Husband it and it will grow our food, our fuel and our shelter and surround us with beauty. Abuse it and the soil will collapse and die, taking humanity with it.’

This ought to be obvious enough, but we have ignored it for so long that by the nineteenth century in Europe it was an accepted truism that forests precede Man and deserts follow him. But we’re no longer in a position to chop down another few acres of forest every time we exhaust the soil on our farms. For many of us, a genuinely sustainable agriculture is now vital to survival, even in the short-term.

The world’s cultivated soils have been exhausted and degraded, by the use of chemical fertilisers, by over-grazing and over-tilling. Since the 19th century, the world’s soils have lost around 60 per cent of their original carbon stock as a result of the way humans have used the land, much of which has oxidized upon exposure to air and become carbon dioxide, adding to the climate change problem. But that process can be reversed. And compared to many proposed ‘geoengineering’ fixes, storing carbon in soil is simple: It’s a matter of returning carbon to where it belongs. And that in turn is a matter of managing land sustainably through good farming practices.

Many farmers and scientists say that regenerative agricultural practices, such as planting fields year-round in crops or other cover, or agroforestry that combines crops, trees, and animal husbandry, may be able to turn back the carbon clock, reducing atmospheric carbon dioxide while also boosting soil productivity and increasing resilience to floods and drought.

But we need to tackle issues of consumption too. Arguably the greatest imperative for equitable global food availability is for people in wealthy parts of the world to consume less meat. In Europe, protein consumption is about 70% higher than recommended by the WHO, and much higher than recommended levels for reducing cancer, Type 2 diabetes and heart disease risks. An astonishing 75% of the world's agricultural land is devoted to raising animals, including both the land used to grow crops for animal feed and pasture and grazing lands. Cutting an average American family's meat consumption by half is the equivalent in emission savings of getting rid of a car.

There is a concern about the strain put on natural resources, and particularly our ability to feed ourselves, by population growth. But population alone is not a good metric with which to measure environmental impact – the average citizen of a rich country produces hundreds of times the carbon emissions of the average citizen of a poor country, for example. However, it is certainly true that the demands made by humans on the rest of the natural world increase as our numbers do.

Trying to protect our environment by controlling human population has always been fraught with difficulties, but our enormous population of livestock (1.5 billion cattle, 1 billion pigs, 1 billion sheep, 20 billion chickens) shows that there is still slack in the system if we use land, water and labour to feed humans rather than animals. This 'second population explosion' of livestock is an added pressure on our limited resources which we can ill afford. A plant-based diet is better for our health, for our climate, for our forests, for our rivers and oceans, and for global food security, and it also helps keep food prices low. As author Michael Pollan smartly put it: 'Eat food. Not too much. Mostly plants.'

Finally, food waste needs to be reduced, both in rich countries (at the consumer level) and in poorer countries (mostly at the post-harvest and storage stage). On a caloric basis, a quarter of the world's food is currently wasted between farm and fork. Reducing waste and eating less meat are both ways to reduce the demands on food production, and are both needed for feeding the planet's human population without destroying its natural wealth.



## It's All About Power

As John Ashton, a former UK climate diplomat recently remarked: 'Climate change is not about diplomacy or energy or capital or economics. Climate change, like everything else, is all about power. A new energy system means new power relations.'

The International Energy Agency made clear in 2012 that staying beneath the agreed two degree warming threshold will mean leaving two-thirds of the world's currently exploitable fossil fuel reserves untouched. A recent study from the Institute for Sustainable Resources at University College, London suggests that a third of the world's oil reserves, half of its gas reserves and over 80% of its coal reserves should remain in the ground if that threshold is not to be breached.

## Recent statistics

Is 'leave it in the ground' possible? In the UK solar power produced 50% more electricity than coal across the whole of May, the first ever month to pass the milestone. Coal was once the mainstay of the nation's power system but the rapid rise of solar panels and of climate change concerns has seen its use plummet, leading to a series of milestones. Solar surpassed coal over a whole day for the first time on 9 April, while the electricity produced by coal fell to zero several times in early May, thought to be the first time this had happened since the late 19th Century.

The UK government has pledged to phase out all coal-fired electricity by 2025, but in June a Conservative think-tank called for the shutdown to come at least two years earlier.

Renewable energy records are also being set in other countries with Portugal running for four days straight on green energy alone in early May. In 2015, 42% of all Denmark's electricity was produced by wind turbines.

Investment in renewable energy around the world now far outstrips that in coal and gas plants. In 2015, \$286bn (£196bn) was invested in renewable energy, more than double that invested in fossil fuel power stations.

The key lesson here is that renewables really are an option for both small and large-scale

power generation in any nation, landlocked or maritime, hot or cold, rich or poor. The level of market penetration is determined not by location, climate or technological progress, but by political will.

Renewables need support to keep improving and growing. Energy storage, whilst coming on in leaps and bounds, is a vital part of tomorrow's infrastructure which isn't far off being able to shoulder the job it has to do. Advanced battery technologies are coming to market far faster than was believed possible only two years ago. This will increasingly smooth out the intermittency of renewable energy whilst also helping the transition away from the internal combustion engine to hybrid and electric vehicles. This is the biggest threat the oil industry faces. What if people don't need its product in future as we reach peak oil demand rather than peak oil supply?

But the speed with which we switch to clean energy will have less to do with technical development, and more to do with political power – how much pressure the fossil fuel lobby exerts on our politicians, and how many of them are brave enough to resist that pressure.

## **Money Makes The World Go 'Round**

Funding the change – moving to a circular economy, protecting natural wealth like forests and oceans, and moving to an energy efficient and zero-carbon economy – is not going to be free or easy. But perhaps it is also not going to be as expensive as some would claim.

As former World Bank chief economist and UK Government economic advisor Nicholas Stern has said, it is preferable even in conventional economic terms to act decisively now on climate change than have to face the grave consequences of inaction later. Stern's 2006 review of the economics of climate change – which he famously described as the 'greatest market failure in history' – estimated that, if left unchecked, climate change could reduce global GDP by as much as 20% by 2050.

More recently, a study by McKinsey found that a transition to a low-carbon economy may actually increase GDP growth in many countries. Certainly Europe's experience under the Kyoto treaty, where emissions dropped by around 18% and GDP grew by 45%, shows that emissions and growth can be decoupled, and the latest figures for global economic growth

(3% in 2014) and global emissions (no change from 2013-2014) confirms it.

But even though the necessary investment in clean energy and efficiency measures is the right thing to do, it's still a huge investment. So how is this new economic model to be funded in a world which is supposedly running short of cash?

The reality is that there is no particular shortage of capital, but currently it is spent on things that aren't going to solve the world's most pressing problems, and often make them worse. For example, Harvard University's Kennedy School of Government estimates that military involvement in Afghanistan and Iraq since 2003 will eventually cost the US alone as much as \$6 trillion. Government subsidies of clean energy technologies globally is dwarfed by subsidies provided to fossil fuels, which reached \$548bn in 2013. The fossil fuel companies themselves spent \$670bn in 2013 exploring for new oil and gas reserves – even though existing reserves today amount to far more than can safely be burned. That's \$670bn a year that could be spent on green energy sources. Then there are the many trillions that governments have spent on saving banks and other financial institutions since the start of the current crisis.

Money spent subsidising fossil fuels or propping up a dysfunctional financial system is money wasted. Fossil fuels need to pay their own way and stop externalising their costs onto nature and society if the new technologies that our planet needs are to reach maturity. Whether through pollution limits, an outright tax on carbon emissions or other forms of regulation, we need to try everything and see what works best within the political systems that exist in different countries.

In Europe, for example, money created by 'quantitative easing' could be used to build the post-carbon economy. At the very least some of the bond purchases should be directed towards 'green bonds' – bonds issued to finance the continent's renewable energy supplies, ensure all buildings are energy efficient and revitalise local and regional public transport links. Such funding could also support developing countries to diversify and green their economies, using 'development bonds'. If we are going to print money, let's do it for a good cause.

When it comes to future investment, it has been estimated that over the next 15 years around \$90 trillion will be spent on infrastructure for the world's urban, land use and energy

systems. How that money is spent will be critical. The world's cities, for example, are responsible for around 70% of global energy use and energy-related greenhouse gas emissions, and are home to half of the world's population. Cities have an opportunity to radically improve the sustainability of our systems and our own quality of life. How cities develop will play a key role in deciding our future. Now is the time to seize that opportunity.

## A people's movement

We are living in turbulent political times across the globe. The Arab Spring and the Occupy movements may have faded after their huge initial impacts, but 'we are the 99%' has become a rallying cry on almost every continent. There is a growing feeling that politics is broken and that business as usual is taking us in the wrong direction. Even Mervyn King, the former Governor of the Bank of England said following the crash "The price of this financial crisis is being borne by people who absolutely did not cause it."

We need a broad and deep change to the current economic and political paradigm. We need to challenge those old values and develop new ones more appropriate for living in the Anthropocene – values that support conscious, active stewardship in an interlinked world. This in turn will depend on the mobilisation and empowerment of people across the world. We need a society in which government is answerable to people and corporations are answerable to government. That society is not going to build itself from above.

The resources required to rapidly move away from fossil fuels and prepare for the coming heavy weather could pull huge swathes of humanity out of poverty, providing services now sorely lacking, from clean water to electricity, and with a political model that is more democratic and less centralised than the models of the past. This is a vision of the future that goes beyond just surviving or enduring climate change, beyond 'mitigating' and 'adapting' to it, in the grim language of the United Nations. It is a vision in which we collectively use the crisis to leap somewhere better than where we are right now.

Escaping old ideas, as Keynes said, is difficult. When ideas and concepts that benefit or represent one powerful group of people at the expense of the majority are universalised, they become the norms that shape our thinking: they become what's 'common sense' and 'natural'. Identifying our own good with the 'good' of this powerful group soon becomes

difficult to challenge and dislodge. We end up accepting a simplistic and beguiling mantra: more growth, more profits, more stuff. And, with it, the consequences: more climate change, more chaos, more extinction, more inequality. Meanwhile, the real stuff of life: the quality of the food we eat, the water we drink, the air we breathe and the landscapes we live in, are often dismissed as the niche concerns of naïve and privileged idealists.

Such distorted priorities have led us directly to the destructive system we currently live under. Create enough zeroes in the right places and you can make a desert and call it progress. This is where we are now.

We know what is wrong with the world, and mostly we know ways to change it for the better. We know how we can prevent the worst of climate change, rejuvenate soils, protect fish stocks. We know how we can create a more just society, how to build a better education system, give people clean water, provide human rights for all. These are not mysteries. We have the technology and the ability and the knowledge. What we are lacking is the political will to make real change.

The only thing that will instigate that change is if enough of us are willing and have the courage to act together to build a more sustainable world.

Our planet is maybe the only place in the universe where life exists. It is a precious thing, and it must be protected and nurtured, not torn apart for the short-term gain of a few. Humans are a force of nature, but we are a conscious force and we can use our power for good. We are not spectators, we are players, and we can shape the game, all of us together.

It is time for all of us to see humanity for what it is: as a single species, interdependent on other species and the one, finite and beautiful planet we live on.

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