

# **The Crisis of Crises**

## **and what it means for anarchists**

**From high finance to peak oil, to climate change, the world is seeing a convergence of numerous crises. We join the dots and look to the future.**



## **Part 2: Infrastructure and Ecological Crises**

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*“...more doom & gloom than you can shake a big stick at...”*

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# Introduction

In the first part of the Crisis of Crises we focused on the financial crisis affecting the globe. In this second part, we shall explore crises more physical in nature, showing how they are not just interlinked with each other, and share connections with the financial world as well. In a nutshell, this will demonstrate that the social and economic standards western, industrialized countries are accustomed to are far more fragile than is often realised. By understanding these inter-relationships in greater depth we can see how the various crises intersect and magnify each other – this is the first, essential, step in shaping responses.

This is not just about recognizing the crises as they unravel. It is also about understanding that not only is our society extremely fragile but that many of the solutions put forward are just as vulnerable. This pamphlet is thus not just a criticism of capitalism but relevant for many of the alternative proposals being put forward by anarchists and anti-capitalists.

Often we fall for the same assumptions which underpin the theories of neo-liberal capitalism and Marxism – that resources and industry will be always be available if we use them respectfully. It is far more complicated than that; in particular the processes of change are nowhere near close to the smooth linear models that anarchists (especially many labour struggle activists) often believe will be the case. We feel that an understanding of the concepts of modern economic systems and their dynamics is lacking and it shows in the naivety of the solutions put forward and in the vagueness of the concepts adopted (such as “just transition”).

A problem for political activists is understanding what crises of these proportions actually means for a society as technologically and energy dependent as ours. There is no point proposing bikes as the answer to transport issues if we do not factor in the cost of the steel and energy to make and the maintain them. Or the cost of the major infrastructural overhaul required for society to adjust to using bikes over cars. It does not come cheap. What of work-patterns, with all their hidden variables and unquantifiable costs? Could London exist as a financial and economic hub without cars and oil? Or trains and cheap electricity for that matter? This should give you some idea of the depth of what is meant when people say that radical social change is needed to face up to these issues.

The UK is in decline as a world power in a changing world. In part one of the Crisis of Crises, we hope we have provided tools to understand the decline as it is happening and to gauge how fast it is occurring. However, the interplay between geopolitics, global economics and access to resources is a complicated one. This is significant because current plans to get the UK out of its current problems could be scuppered by changes elsewhere. Nevertheless from the point of view of the UK we believe financial issues will be the first problem to really hit home. It does not matter if there is still oil in the rest of the world if we cannot afford to buy it.

The way out of financial crisis is through economic growth, but economic growth does not appear magically. It is dependent on access to energy and raw materials, both in ever shorter supply and both more expensive for us to buy, due to increased demand from other countries and because of the longer term currency weakness of Sterling.

The Marxism of the traditional left and class-based politics is blind to this problem, dependent as it is on assumptions about access to resources and a focus on the workplace as the only valid forum for political struggle. Conflicts between continued economic growth and climate change remain brushed under the carpet. So, from an ecological perspective, socialism is merely a modification of capitalism's industrial basis – solutions to the current crises require a deeper analysis.

It is our belief that anarchism is the radical system change that is needed, as the only political theory which is capable of balancing all our needs, whether social or ecological. However, this will only be possible if anarchists organize themselves for the upheavals and threats ahead. It is scary reading, but the crises are already beginning. This is the period of the slow build up. It may take one year, it may take ten, for the full storm to hit, but fear is no excuse for not planning now.

This is why we believe that green and black anarchism, with its creativity and openness to all issues, is what provides the real alternative in this scary future. In all this upheaval, there are also opportunities to be grabbed. Indeed, a failure to assert cooperative and autonomous solutions will leave us in a very much worse position.

Change will not happen in a vacuum; governments and corporations will not simply collapse, leaving us free to pick up the pieces. They are going to seek more control over existing resources to protect themselves in the face of these threats, and eco-fascism is a distinct probability.

For too long our political thought has been tempered by the faux freedoms of the capitalist world – benefits, skipping, funding grants. Too much is taken for granted and too much lip-service given to the needs of environment by those supposedly caring for it. Frankly, everyone, including anarchist activists, have been living the easy life.

When will the crises start to converge or their effects become more obvious? We do not know - nobody can just yet, though the biocrises are already in play. There are so many different factors colliding with each other that predictions are reduced to guess work. Different problems affect each other, some off-setting issues, others exacerbating them. For example, pollution from flying plays a role in 'global dimming', which offsets global warming from carbon in the atmosphere. Changes in housing policy will affect soil depletion. A decrease in operating businesses may offset water consumption rises due to an increasing population.

In this pamphlet we will cover many issues, none in any particular depth. The principal aim is to highlight the factors that influence daily life, especially the currently hidden ones which will become contentious in the

future. For example, while land-use does not play a major role in our lives at the moment, if food security becomes an issue, as happened in Cuba, then it will be the topic on everyone's lips.

There is no need to be an expert on each crisis. It is simply that we need to consider how much of a proposal relies on other resources when developing solutions. It is a nightmare to get your head around everything, and our advice is not to try. This is an attempt to introduce just enough detail on the issues and their interconnections. This will give an understanding of the bigger picture so that as news emerges in trickles there is a better idea of how it fits into the bigger picture with a better idea of how consequences may precipitate throughout the economic and ecological systems.

If we start thinking about this now, it means that when the challenges do arise we will be ahead of the game, both politically and practically. As much as anything else, this is a call for the green and black movement to prepare, to plan, to take action. This is the calm before the storm; the question is will we be ready for it?

## Physical crises

These can be broken down into different categories depending on perspective. In this pamphlet we categorise them from where they have their roots; that is:

1. the biocrises - climate, food, the water cycle;
2. society's economic infrastructure - mineral and fossil resources, energy, industry, roads, cities, etc.

For the time being we shall ignore political and social crises as these will ultimately be driven by the economic and physical ones.

Much of society's infrastructure is taken for granted. We "know" that few changes will ever be made to the fundamental on which it is structured; choices are based on assumptions of access to the same amount of resources or that the weather is going to be pretty much the same year after year, or that we can always rely on some other part of the Globe to come through. While these assumptions are most obvious in the rapid development of green capitalism (covered later) they feed through even to radical politics, where underlying connections are not being acknowledged, or there are attempts to create hierarchies of crises.

For example, people talk about peak oil in one breath and solutions to climate change in another, without realising that the two are fundamentally connected. Or failure to acknowledge that patriarchal society is deeply connected to exploitation of the planet. You cannot look at one solution without considering the other issues as playing important roles.

The level to which politics have been shaped by years of affluent society is evident in the regular failure to consider where the money will come from to pay for all the changes needed. Failure to join up these dots leaves much of the existing praxis of activists of all stripes sitting on shaky foundations. Living in a western post-industrial country obscures the real cost of change and development – society is about to learn that cost at a point when it is least capable of grasping and adapting to the consequences.

Britain, Ireland, Iceland and quite a few other countries are facing a double whammy: on one hand a financial disaster, and on the other climate change and resource depletion. The changes needed to deal with the latter require significant political will and financing. The problem is that the financial crisis has changed the world and saddled the UK with debts that must be paid off first. Emerging nations have greater financial muscle to pay higher prices for the same set of limited resources. Western nations struggling under high debt will be squeezed out of the market altogether or have to make deep cuts to afford the resources needed for the structural changes, whether industrial, environmental or societal. The longer it takes to face up to this future the harsher it will be. Currently it seems like mass denial is the order of the day.

# Energy

It would not be an overstatement to say that energy is the single most important factor to be considered, even more so than access to resources such as water and soil. Resources cannot be used or extracted without energy. Change cannot take place without access to it. Just consider the impacts of gas and petrol shortages, or image the changes needed to get everyone to cooking without access to fossil fuels.

The nature and role of energy, in particular fossil sources (oil, coal, natural gas) has underpinned much of the transformations that have taken place over the last three hundred years – the industrial, post-industrial and green revolutions are all simply aspects of the energy revolution.

The ready availability of oil has permitted fantastical changes in transport and communities to take place, increased urbanisation, increased the extensive and wasteful use of electricity and increased the development of technologies that require ever more energy (and ever increasing precision).

Capitalism would have struggled to have reached its current levels of development without being underwritten by access to cheap energy.

Our entire society is built on the premise that such sources of energy are abundant – and if we do not own them, then they can be purchased from countries that do have them. Technological advances and population increases all follow the same curves as energy supply. Health, food supply, warmth, housing, manufacturing, transport; - all are utterly dependent on it. It does not take much to see how an extended cold period can jeopardize all of this. It is only for so long that industry can take second place as gas is diverted to residential homes, as happened in 2009/10. It also demonstrates how precarious the existing infrastructure, dependent on global supplies, actually is.

How society's access to energy changes affects every aspect of life, including politically, especially if we are already very dependent on it. This is why understanding the accessibility of, not just the value of, global reserves is so important. We will develop the way that energy will affect other physical crises as we go along.

The consumption of energy is what drives much of the current "greening" of politics and capitalism so there are many pitfalls to be found here. A focus on keeping the energy flowing simply props up the existing exploitive system. However, most new "green" solutions still require other industries to be in place, such as coal and steel, to feed the manufacturing required for the transformation to "renewables" - a misnomer when one considers the continuing reliance on mineral resources and industrial investment to build and maintain them.

If energy consumption is not challenged then the underlying problems remain - and that involves more than switching to low energy light-bulbs - which do not grow naturally on trees, for that matter... Likewise, it opens the back door to nuclear power (assuming it is financially feasible to build new power stations).

## Climate Change

Climate change is as complex as economics when it comes to the interplay of factors. One problem is that there can be a ten-year delay before changes come into play. That is, the climatic effects being experienced today are caused by the levels of atmospheric CO<sub>2</sub> ten years ago, due to deforestation, industry, animal farming, etc. At current CO<sub>2</sub> emission rates the next decade is likely to see a two degree rise in global temperatures. Thus the world has to cut existing CO<sub>2</sub> and related pollutant output from current levels now - not wait until 2020!

A report by the UK Met Office in Dec 2009 states that if emissions dropped to zero tomorrow there would still be a 1.3°C rise in global temperatures on the pre-industrial average. A minimum 4% cut year on year from 2018 onwards is needed to give only a 50% chance of avoiding the 2°C barrier. Not cutting until 2020 requires a 5% year on year cut in emissions and so on. Economically, these are staggering figures. We cannot emphasize how much unacknowledged but inherent change there is in them. It's far more than simply moving to "low carbon economy"!

However, banding these figures around is misleading as governments need economic growth in order to get them out of the financial mess. Such figures allow the impression they have the breathing space to make promises of future cuts while increasing manufacturing in the present.

Neither governments nor campaign groups are considering the time-scales necessary for systemic structural adjustment of economy and society to deal with climate change. Government departments are competing with each other rather than joining up the dots. Corporations are not considering longer term issues, with bonuses being calculated solely on how well they have done in the previous year with little incentive to think longer term.

Furthermore, in the best case scenario, governments predict it will take to around the 2014 mark to fully recover from the financial crisis, eating considerably into the time left to tackle existing climate change - while making it worse in the meantime. Talk of Green New Deals, etc, to change the national infrastructure to a lower carbon one is just talk, and remains focused largely around corporations which prefer a centralised approach.

And all this assumes that large scale geo-political shifts will not push the UK out of the first tier of global economies, and would cause the government a whole new set of problems.

In terms of the next ten years, there is scope to understand the challenges facing the UK in particular. As a country with a temperate climate it is greatly buffered from the worst effects. There are still fears over a shift in the Gulf Stream which carries a vast amount of heat to the northern hemisphere; that is not certain to happen yet, but is a terrifying scenario from a food and infrastructure perspective.

However, there will be two principle effects even with a 1.5°C rise:

1. Extreme weather variations
2. Sea level rises.

## ***Extreme Weather Variations***

For a long time Britain has been blessed by relatively gentle variations in weather across the seasons. There are no monsoons, severe droughts or hurricanes, or the long, icy winters experienced in many other places in the world. People complain about the rain, but it could be a lot worse. This stable weather system has been very important for the growth of the country, allowing a more relaxed and productive growing system, reduced demands on construction standards and a steady supply of water.

This is changing - the effects are already visible. What is now appreciated as a gentle cycle of seasons is moving to a more extreme one. Events that were classed as "once in forty years" or "once in a hundred years" take place much more regularly. Greater temperature fluctuations and rainfall deluges are becoming the norm.

This creates many problems which will grow more apparent over the coming decade. Though not comparable with what is going on elsewhere in the world, a key factor is that our vast mainstream infrastructure, whether roads, housing and farming or soil and drainage systems are not geared up for this new regime.

Other nations are likely to suffer more. Weather patterns are all tied in with global wind cycles such as the Jet Stream. How these move can mean a drought or an incredibly wet season for different parts of the world. Warming seas and land masses cause these wind patterns to alter, resulting in devastating flooding or desertification. If you are already in an area with drought problems the last thing you need is for it to be hotter for longer.

People often get caught hooked on the idea that the world will warm – parts will, but it will be very far from even. The real effect is climate chaos as the weather deviates ever further from the centuries-long stability our societies are accustomed to. Globalisation of supply chains mean that western societies will be very much more exposed to problems elsewhere, especially when it comes to food prices.

## ***Sea Level Rises***

Current studies predict that a 2°C increase in global temperature will cause a 50cm rise in average sea levels. As well as coastal infrastructure damage there will also be knock-on effects on soil, coastal erosion and rivers which have financial and social costs of their own.

Western society is highly focused around the coasts, partly due to trade and partly because low lying river plains are generally very fertile. Rivers also provide a significant source of water for industry.

Rises in sea levels will affect low-lying land, putting increased pressure on already costly flood defences. Even inland cities on large estuary rivers such as the Thames and the Severn will be greatly affected, whether the surrounding land to the urban centres.

There will be effects such as increased salination and loss of coastal habitats and farms as a result. The Fens, an important source of food

staples for the UK, will be badly affected. This, in conjunction with internal population changes as people leave areas of high flooding, will place further strain on infrastructure. Insurance in poorly defended coastal regions is already rising faster than the sea levels are, creating more pressure to move inland. At the same time, new developments appearing on existing flood plains are “needed” to solve the current housing shortage (and help a return to profit by the economically important construction industry) is being ignored. These developments increase the risks as they alter the drainage of the land and may actually increase the likelihood of flooding, while consuming fertile land required for food production.

GlobalFloodMap.org predicts that a rise of 18in (40cm) in sea levels (less than the 50cm if we hit 2°C) will cause 1.2 million people in the UK to be displaced. This does not take into account the effects on transport, insurance and industry. Some places will have up to 47% of their population at risk – enough to drive everyone away from the area as local infrastructure implodes. Clearly it will be the poorest and most disadvantaged who will be hardest hit, though the cries of middle class home owners may cause governments to take belated remedial action.

According to the Environmental Protection Agency, flooding, whether from sea level rises or weather changes, currently costs £1bn per year in damages and probably 2 to 3 times greater once knock on effects on infrastructure and business loss is factored in. Management programmes prevent another £3.4bn of damage. The cost of repair has risen 60% since 1988.

Internal migration will add strains to existing city and water infrastructure. Much of this could be avoided by paying for sea defences. The EPA estimates over £20bn is needed for climate change related flood defences by 2035, with over 5 million people at risk (1 in 6 homes). How will this be paid for? And how is this going to change the population map in the most affected areas? Given the financial squeeze already happening, paying for it almost certainly means money being taken from elsewhere.

Ironically, there is another problem – coastal erosion is being further affected by dredging for sand and gravel to support the construction and road building industry. And there is the ever-so-slight issue that all nuclear power stations are built right on the coast...

Globally, sea rises will cause an increase in refugee numbers, a reduction in food supplies (exacerbated by existing industrial water extraction practices) and political turmoil. In turn, this will cause staple foods to rise dramatically in price, greater difficulty in extracting resources, and probably a rise in trade for arms manufacturers.

## Population

There is a big debate to be had regarding how anarchists and ecological activists approach the contentious issue of population, which we will cover in a subsequent issue of *Dysophia*. However, population is a factor that cannot be ignored, or put to one side.

The principle way it comes in is through the crude equation for an average “standard of living”, which is the amount of available resources divided by the population requiring those resources. This assumes everyone has the same standard of living, ignoring of hierarchy and uneven distribution of resources for the time being. With this as the starting point, if there is a reduction in exploitation of finite resources then, as population increases, standard of living goes down. Whether modern, western society with its consumerism and expectations is ready for, or capable of, a reduction in living standards is an open question.

The work of the economic historian Carlo Cipolla (*“An Economic History of Population”*) and others demonstrate a direct link between population growth and energy availability. Many models of population growth fail to take this underlying factor into account, simply predicting continued growth at existing rates. This seems entirely unrealistic.

Increased access to energy allows improvements in health, cheaper food and cleaner water. Advancements to date will not simply disappear – the knowledge can be preserved, but they are still resource dependent. As healthcare and food become more expensive and difficult to access, mortality rates increase to slowing population expansion, helped along by conflict and disease. Refugee crises and the difficulties associated with of city dwelling in a lower energy society will also affect mortality rates.

Climate chaos and land degradation also cause population movement - one of the most obvious sources for scapegoats, and thus flashpoints for political unrest. This turmoil in turn affects global markets, so countries which have pegged their own continual economic well-being to global supply chains are also factoring in these problems.

There are also the infrastructural as well as political challenges as society attempts to adapt to changing rural / urban demographics and local authorities struggle to deal with large losses or rises in populations.

Undermining capacity for coping are neo-colonial moves from the likes of China and western hedge funds, which are buying up vast swathes of African and Central Asian farmland for their own populations. Ultimately this will affect local economics and politics, most likely in terms of increased exploitation and resource plundering. This has happened numerous times before, for example the catastrophic Irish famine in the 1840s.

In that case there was enough food available, but most of the land was under the control of British gentry who were exporting the food while the native population were left to rely on poor land and forced into a subsistence level dependency on the potato. When that crop was struck by disease, two million died of starvation, and another two million emigrated.

Once population decreases in an area it can kick off a vicious circle of declining labour force. Combined with an unfit transport infrastructure this will start reaching critical levels at which point local industry networks implode. In turn this provides further impetus for migration. Local governments depend on having a big enough taxable population will not be able to meet their needs. Places like Detroit are advance examples where the city is being forced to shrink its borders to survive as a viable entity. Detroit does, however, also demonstrate some of the more positive approaches to this type of crisis.

Elsewhere the rise in populations through migration, etc, will strain local water and housing supplies and labour markets, which distorts local economies. It also places great strains on medical and welfare systems and, in the worst cases, massively increasing homelessness, unemployment and health problems, and, of course, social tensions.

### **Cities**

All this is before the high energy footprint of cities is taken into account. It has been pointed out by many researchers that cities are expensive in terms of the planet's resources. They have high infrastructure and energy costs and give their inhabitants a much wider ecological footprint. This is because they need transport networks to supply food, water and other resources to mostly unproductive habitats. In turn this leads to increasing CO2 output through construction and maintenance of these networks, as well as encouraging more traffic to take to the roads. However, construction is a key economic driver and source of employment, fed by the demand to have cities of cement, tarmac and brick. How the government thinks it can balance (or afford) these two competing factors remains to be seen.

While there are many schemes to make cities more productive in terms of water and food, it is a very real question if there is enough space within cities themselves to scale these.

On the other hand, a "back to the land" movement is limited by a number of factors, including the amount of land available, the skills to make it work and the ability to purchase it. While a more rural economy makes more sense, the outcome is likely to be somewhere in between after a lot of political upheaval and change has taken place.

Considering public transport as a solution to some of the problems facing society is one answer, but it has a lot of hidden costs to be factored in. Strong urban centres require public transport, which itself requires significant infrastructure, and is dependent on a mobile, urban population to make it economically viable. It is a factor in promoting urban and economic growth but because it is developed to serve particular social geographical circumstances it is not reliable in a changing society. A collapse in public transport, perhaps through under-investment or high fuel prices, would have a domino effect on the city and suburbs, in particular prompting internal migration, as people have to live closer to where they work.

## Industry

It is worth understanding two related concepts here as they help explain how industries rise and fall. These are economy of scale and critical mass. Industries do not appear from nowhere; they require various things such as markets, access to resources (capital, materials) and a sufficient skills base. Without all of these in place, attempts to develop a new industry will fail. The history of industrialisation is not a smooth constantly growing one, but a series of mostly upwards jerks and steps as factors come into play.

Key to success is being able to produce goods cheap enough for the market place to afford them – loosely called “economy of scale”. At certain points, the surrounding markets and existing industrial base hit a critical mass where it becomes economically viable to engage in the manufacturing of new types of goods. This is a self-feeding system. This sort of industrialization creates capital, which in turn funds yet further growth. This is an inherently exponential system, and is what underlies the principle that capital cannot exist without growth (or at least the promise of growth).

To produce cars you need an infrastructure that can handle them (roads, petrol stations), people who can afford to buy them and the resources to make them cheaply enough. The transport revolution that came with the petrol engine would have fallen flat on its face without the financing to lend people money to buy the cars, the infrastructure of cities and towns to generate markets, the massive changes in the structure of the oil and steel industries and technological advancements in production of parts. Likewise, the globalization of economies was only possible as the costs of bulk transport and international communication came down.

There is little room for cottage industries in this system. Where they exist it is often incidental to the main economies or dependent on them, making it hard for them to be straightforward alternatives to industrialisation.

However, the point is that critical mass is required in any industry for it to remain viable within the capitalist system. Without it, economy of scale cannot be reached or sustained. For most of industrial history, production has driven consumption, though since the Second World War, it has been western consumerism that has become the driver in creating seemingly endless markets and funding technological advances.

Conversely, as markets shrink and resources becomes less available, industry becomes unsustainable and could ultimately implode. As one industry crumbles that affects other industries interconnected with it. In the normal course of things, as one part goes down there is sufficient flexibility in the system to take up the slack. However, throw several large problems in at once and the disruption ripples through to everyone.

Thus, the collapse of the car industry hurts the steel industry, which in turn shuts down UK steelworks. With Sterling weak, this pushes up costs for other industries requiring significant amounts of steel, so job loses steadily ripple outwards. Even individual blacksmiths are affected as the cheap metal relied upon to make up for the high cost in labour is no longer there.

## Peak Resources

Oil is just one of a number of resources that our society depends on, but which are reaching the end of their availability and production. Other significant ones are coal, natural gas, phosphates and even water. Many of the principles of peak oil are just as applicable to other resources.

### *Peak Oil*

Hubbert's bell-shaped curve of peak oil is well known but in its common form it simply measures the rate of extraction of crude oil (the curve) with the total world availability of oil being the area under the curve being mostly constant. The faster the oil is extracted the steeper the curve becomes, with a more sudden and faster the decline resulting.

A more sophisticated graph is to consider oil production, or similarly a measure of how much energy is needed to produce every barrel of oil. This approach shows much more rapid falls. There are two reasons for this.

1. Remaining reserves are much harder to access, so they require more energy and capital to extract them. For example, it takes the equivalent of one barrel of oil to extract every two barrels from the Alberta Tar Sands. This ratio of 1:2 is far worse than the 1:100 ratio experienced at the end of the 19<sup>th</sup> Century, which sparked the oil revolution in the first place. For example, the aviation industry only exists because of cheap, good quality fuel which means it is economically efficient. The more energy that needs to be put in to extract it, the more expensive the oil becomes.

This is why only recently has extraction from the likes of the Alberta Tar Sands become economically viable. It is also true of recent discoveries of Caribbean oil reserves; these are actually 2km down, as well as being much smaller than other fields.

Much of this is being dressed up as technological advances on the part of the oil companies. The reality is that high demand and falling reserves are changing the economics of what is worth doing, as the technologies are often high energy processes in themselves. They also lead to greater levels of pollution than more conventional extraction processes and have knock-on effects elsewhere.

Such projects clearly require much higher capital investments to get them off the ground, either taking that capital away from investment elsewhere, or becoming a limiting factor in itself.

The cumulative effect will be to keep oil prices high and a peak oil curve that falls off far more sharply in terms of oil supply. Given the importance of oil to modern economies, this is extremely concerning.

2. While it is possible to extract oil from ever more difficult situations, there is still an issue of peaking supply. Oil, more than most fossil fuels, requires significant processing to turn it into useful materials. Investment in oil refineries however has declined, so that the worlds global oil supply is as

much dictated by the refining capacity as it is by the number of barrels being extracted per day.

Natural calamities, such as Hurricane Katrina can take oil refineries out of action, which also pushes up prices. As it stands there is no slack in the system; oil production is at its maximum. It takes several years to bring a new refinery on line, so there is little room for flexibility as things stand, despite the financial crisis.

With global demand continually increasing, there are major consequences for oil dependent societies. There is more competition for existing supplies, which are unlikely to grow with any rapidity. This means that countries must be able to purchase that oil, which requires strong currencies for those that have no oil of their own. The Euro looks like it will be able to cope, but Sterling is in trouble.

Geopolitics will also play a role, with mineral and fossil fuel rich nations such as Russia flexing their economic muscle, or looking to develop their own internal industry over exports. An example of this was when Gazprom cut off natural gas supplies to Europe in a dispute with Ukraine. The effect was panic inside EU governments with wide-scale energy security reviews established. It is these reviews which have pushed coal and nuclear power stations back on the agenda. However, this does not deal with the dependence of the manufacturing world on oil and gas for other products, and also for heating.

Another significant geopolitical change is the crumbling of the petrodollar system. Ever since a private meeting between Roosevelt and the king of Saudi Arabia after World War II, oil has been bought and sold in dollars. So, oil rich nations have a lot of dollars they needed to spend - this has been propping up the US economy for a long time and helped make it the de facto reserve currency, which benefits America.

However, there is global questioning of a system which only benefits the US. And with the dollar itself becoming weaker because of the global financial crisis, it is no longer in the same position to defend itself. There are now moves afoot to set up new exchanges to trade oil in currencies other than the US dollar. If this takes off, it will have a major impact on the US and through the financial world, the UK as well.

A squeeze in oil availability, whether through production or prices, hurts those parts of the economy dependent on it first - fertilizers, chemicals, electricity generation, transport and heating. Higher prices will push up inflation and weaken the economy in the long term, as food supplies drop and the cost of foreign goods goes up, probably leading to prolonged unemployment as business cuts back. It is a struggle to maintain itself where there is not a cheap supply of energy and materials. Our current standards of living are dependent on cheap oil and any policy that does not admit this connection is fatally flawed. Capitalist nations not prepared to make the necessary cuts in spending will come off worst as a result.

## ***Peak Water***

Consumption increases and poorly maintained distribution systems on top of increased demand from industry and farming have all strained global water supplies immensely. Even the UK, with high rainfall levels, has some rivers effectively running dry since 2006, despite the instances of flooding. Globally, major rivers such as the Rio Grande and the Indus no longer reach the sea due to the amount of extraction.

Water as a resource is more important than oil. It is vital for many industries and for agriculture which creates tensions in itself partly through driving social upheaval. That water would be a source of conflict was predicted as long ago as the 1950s, and water access is now an important political issue.

In India, rural communities near large factories are declining as there is now insufficient water to reach their needs or the supplies are too polluted to use. Thousands of farmers and their families are abandoning the land for cities, in turn places greater pressures on the cities' own water supplies.

Cities themselves are huge consumers of water, especially where there are by wasteful toilets, washing machines, etc, all treating clean water as an endless resource. Yet, without an adequate water supply, and the infrastructure to supply and treat it, cities would rapidly collapse.

The "green revolution", which sped up the reliance of farming on mechanisation, fertilizers and modern hybrids have required farms to increase greatly the amount of water they consume. Non-compost-based process mean the land does not retain as much water. The new hybrids of grains and seeds require higher amounts of water to sustain their greater yields. As a result, modern techniques are only capable of being applied to much of the land due to mass irrigation projects. Chemical fertilizers also bring in problems of pollution. However, it will require considerable investment to put in place alternatives to a system decades in the making.

The rise of meat and dairy consumption is another factor in the rising water consumption of farms, not just through the direct needs of animals, but in the use of water intensive feedstock such as soy and alfalfa.

Clearly, questions of resource distribution are paramount here.

Globally, sourcing water is a concern for many nations from California to Darfur. Gaza is being stripped of its water reservoirs by Israel which controls 90% of water in the region; Jordan is also dependent on its neighbour for supplies through the Golan Heights. It is not just people and farms who need water; there are few industries that can survive without access to it either, which makes it a vital matter for capitalism as well.

Even in Northern Europe, which has a well established rainfall pattern, at least one third of water consumption comes from underground aquifers which are being consumed far faster than they are being replenished from rainfall. "Water stress" is already recognised as a problem in the UK. These aquifers are not simply underground lakes, but porous rocks and once they become dry they lose their ability to absorb rain in future. Alternatively, the

water may be replaced by salt water. which destroys soil. Globally wells are now sunk an average of 6 times deeper to find water. The result is that society in many places across the world is now as dependent on fossil water as it is on fossil fuels and that is a dangerous place to be.

Rain is where climate change will have an early effect. Increased droughts and heavier rainy seasons will affect the land and the aquifers, causing land productivity to decline, while factories may not be able to get the water they need either.

Water supply is important for refinement of ores, power generation, and for dealing with pollutants. So as water supplies change, there are knock-on effects on economies and food supplies, with the potential for geopolitical realignments as a result. For example, it is predicted that water supply is going to be the key factor governing relationships between water-rich Canada and the water poor US - California and the South West already coping with serious problems. A consequence is increased interest in nuclear-powered desalination plants and similar proposals.

Even in the UK there is reliance on fossil water to meet our current demands. This requires energy to pump it from the ground, as well as to get it to the cities. It is estimated that a third of water is being wasted through inefficient systems and leaking infrastructure which needs to be replaced. How that can be afforded or managed on a national scale is not clear; likewise the investment needed in technologies to reduce the water footprint of industry (without simply sending manufacturing them abroad).

Personal water consumption and not just indirectly through consumerism is also rising. Cutting down is not so simple an answer as most of the sewage system is Victorian and requires a certain amount of water flowing through or it degrades faster – a problem with low flush toilets...

Many water systems that they are built to handle water intake based around particular rainfall patterns, rather than the total annual rainfall supply. Land and drainage systems can absorb only so much water at once. Too much and the drainage systems are overwhelmed, while soil is leached of nutrients. Too little and irrigation is needed, while aquifers are negatively affected. Land that has dried out does not absorb as much water in the heavy season. Both these problems have the effect of increasing flooding, while modern building and farming techniques are contributing factors too.

Water extraction also destroys rainforests and other vital ecologies which play a role in water retention and land fertility. Dam systems, built to serve cities have had longer term impacts on land productivity. Where built in different countries they have helped fuel conflict.

All this can be handled, but only if the investment is made. That requires both financing and social change. Currently, much of the focus is on infrastructural projects that tap into existing reservoirs already under strain from the effects of climate change, in particular mountainous glaciers and smaller aquifers. Neither is sustainable in the long term and both fail to consider climate change effects.

## ***Other Peaks***

While water and oil are under the most obvious pressure, other natural resources are also showing increasing scarcity due to rapid exploitation for industry and to satisfy the market place.

Increased plant yield for example, requires phosphate fertilizers. Normally phosphate would come from compost. However, that system does not work on an industrial scale. So, to meet the demands of modern farming (which they helped shape), the agro-chemical industries have turned to mineral sources to supply it, of which there are finite amounts being dug out at ever faster rates. Already China is said to be stockpiling it, worried about global shortages. This is but one way in which the green revolution made farming and industry highly inter-connected, so that now each needs the other to maintain output and thus profits.

It is not just phosphate. Many graphs are growing in an unsustainably exponential fashion. It is not clear which resources will peak first, but any peak will have knock-on effects the globe is not well equipped to deal with if it is tackling other crises at the same time. The issue, like any growth-related consumption, is that while there may be large reserves, the speed at which they are being consumed is ever faster. So, one has to be careful of quotes of estimates of supposed reserves. Current rates of consumption are ever increasing, which in turn reduces the life-span of those reserves. Also, as with oil, not all those reserves may be cost-effective to extract.

All this is compounded by the fact that extraction processes are themselves significant contributors to CO<sub>2</sub> and other greenhouse gases, environmental degradation, as well as energy and resource intensive in their own right.

Furthermore, they are already exhausted in the West. For example, most of the world's iron production is centred in the new global powers of China, India, Brazil, Russia & Australia, whose own growth is dependent on their continued exploitation. There are similar stories for other widely-used metals, such as copper and aluminium. Prices for them on world commodity markets are increasing, mostly due to increased demand from the likes of emerging economies, which in some cases are purchasing mines outright.

Those who expect hi-tech solutions to provide the answer must remember that they are often dependent on particular rare metals. For instance next generation semi-conductors require the element Hafnium – currently predicted to run out in 2017. Mobile phones need coltan – found only in one place in the world: a mine in war-torn Congo. Hi-tech solutions also require greater precision in engineering, which is far from cheap, as well as concentrating access to those technologies in those with the necessary skills and infrastructure.

Again, there is an economy of scale factor; it is only worth putting in the investment and energy to produce significant amounts of steel, etc, if there is sufficient demand. Insufficient demand pushes the prices up and the product further and further out of people's reach, to the point the industry

cannot sustain itself. The result is not so much a smooth decline, but a sudden fall. Imagine what would happen if aluminium became too expensive to have so many drinks cans? Whole industries would collapse and the aluminium industry itself would be heavily wounded by the loss of that market.

As with oil, the ability to refine is a limiting factor and has its own heavy energy demands (for example, the need for an entire network of hydro-electric dams in Iceland solely for aluminium smelters). Thus, while it is estimated there are enough copper reserves available to last until 2100 at current usage levels, it is limited by the number of smelters available. However, if there were only a 2% growth year on year in the amount of copper being produced and used, it is estimated that those reserves would only last another 25 years.

Already many of the world's largest mines are coming to their end of their lives, which means opening up more if capitalism's demands are to be sated. This will require a price in terms of ecological and financial impacts.

For those who advocate recycling as the answer, this is simply failing to address the underlying problem that ever more production is required by capitalism. Nor does it take into account that, where metals are concerned, recycling is an energy intensive project. Not to speak of a much more civic responsibility when it comes to recycling. At some point there will be a cost-benefit analysis that will make recycling cost effective, but the causes of that are very likely to be causing other problems at the same time.

Steel, copper and aluminium are all things we take for granted and assume they will always be on hand. They are integral to our society, but there is no guarantee they will be there for our future, and many solutions fail to recognise this problem. Bikes are only cheap because there is a massive steel industry keeping raw materials prices down. To go to a lower scale, to lose that industry as it currently stands, will start putting bikes out of people's reach – at a time when there is a desire to get people switching over to cycling much more. This brings out another issue: that many of the solutions for a low-carbon economy still require heavy industry to produce the base materials for low-carbon products, a process which is still energy and carbon intensive. The outcome will be that decline will not be smooth, but full of sudden drops.

There are still many debates to be had here on the relationship between industrial activity and ecological sustainability, and over our own expectations of what resources should be available to our society.

## Peak soil?

Soil is a resource, and like others given by the earth, it is only slowly replenished. It needs looking after if it is to keep giving, and it is also far more complicated than people realise. Good soil is the product of time, energy and processes, which need the right conditions; it is not simply turned out of a factory. It can take a lot of battering, but it has its limits.

The exploitative processes of capitalism place as much strain on soil as they do on other parts of the biosphere. Constant use, monocultures and over-harvesting degrade soil over time by removing water and minerals. Plants need a complex balance, but modern fertilizers focus on just a few basics which create distortions in the underlying ecology.

Increased mechanisation speeds up usage of land and its erosion. Constant tilling and monocultures disrupt the soil's ecology, while removal of hedgerows to ease mechanisation affects the habitats natural pest controls and opens the soil to further erosion. High yield hybrids and drainage are also sources of damage and erosion.

Good soil is capable of moderating the effects of floods and droughts, and other extreme weather changes. However, degraded soil leaches nutrients quicker and is far more prone to flooding, which in turn impacts on water resources. Soil fertility is also dependent on water cycles and the season (through its microbiology), so as climates alter then so does soil health.

Changing landscape such as cities, housing developments and dams also negatively impact on soil availability by interfering with water flows (which can also bring in nutrients), in particular in flood plains. Historically most settlements are built around rivers, normally where the most fertile soil is to be found. Rivers and floodplains are important eco-systems and vital for water management; yet these have steadily been destroyed as human settlements expand into demanding towns and cities, which themselves alter water flows and tables besides increasing pollution.

Soil exhaustion is a problem that has been around for a long time. The majority of the civilized world suffers from soil erosion in some form. The American dust bowl is a classic example of what happens when soil is abused, but it is a process happening across the world. Desertification and water retention issues are very real, as is the contamination of drinking water and pollution of other ecosystems.

This is before the issues raised by climate change are factored in – changing rainfall patterns, whether heavier or lighter, will increase soil erosion rates. Modern farming techniques also weaken the ability of the land to handle these changes.

At the same time population rises and demand for biofuels continue to increase these pressures on soil globally. So it is not just that the amount of land available to farming is falling, the quality of that land is also suffering both from capitalism and from climate change. Unfortunately, that demand is not being dealt with in a fashion that promotes longer term sustainability. Soil itself is possibly a peak resource, and that poses interesting questions.

## **Peak resources = peak industry & food**

Water, oil, energy and minerals are factors limiting humanity's ability to sustain industry and food supplies. The dependency of affluent society upon them is mostly just acknowledged through lip-service. When challenged on where they will come from in the future, government and corporations simply say that the global markets hold the answers. What this fails to do is to recognise two basic facts:

- One: in terms of resources the market cannot recreate; it can only consume.
- Two: looking to the global market is only a realistic answer when you have the finance to buy from it (peak capital?).

The peaks are all interconnected, and solutions to each peak are likely to increase the stress on other resources. Biofuels are the best known case with their increased demand for land, fertilizers and water. These are the vital dots not being connected. Any solution not taking into account the range of effects and dependencies which exist around it will either be doomed or exacerbate the problem.

The green revolution which changed global farming techniques and revolutionized food supply brought a dependency on fossil resources into the system in a very basic way. So much of the changes that have been wrought in terms of food production because of it are not sustainable in the long term, especially the current high yield monocultures.

The result is that food may face its own peak due to the increasing demand, coupled with land & resource availability shrinking in the face of climate change and capitalism's demands for growth.

Industry suffers from the same types of dependencies. Society depends on both, though we often fail to make the connections even when they are staring us in the face. Plastic has infiltrated our daily lives like nothing else in the last few decades, yet plastic is almost entirely made from oil. Radical social change in the face of this is inevitable.

It is clear that industrialisation itself is facing a peak as things currently stand, and thus by default so does society. In places like Britain the effects will be seen sooner than most people expect as its global authority declines. This is down to its own financial crisis and the UK's great debt mountain weakening both industry and Sterling, accelerating the loss of access to the raw materials that it is no longer able to produce itself.

Ultimately the effect of all of this is going to be price rises. The cost of food will once again start rising as a significant fraction of people's spending, forcing cuts in discretionary spending on other items. This in turn will damage any "financial recovery" from the debt crisis. As other goods also become more expensive then standards of living will also drop, and for economies dependent on discretionary spending such as holidays and services that will have an even greater impact on the economy.

## **Fragile society**

Society is built upon consensus, a shared belief system, implicit more often than not, that certain things are as they are and will not change. Choices become orientated within these beliefs.

In the affluent west, this had been shaped by long periods of political stability in Western Europe and North America combined with ready access to resources. Only two centuries ago food, water and heating were daily worries in most people's lives; electricity was not even around. Now we take them for granted and talk about eradicating poverty. Imperialism and financial colonialism tied in with industrialisation has combined to result in a belief that everything is fine in the world and we can have what we want.

As materials and energy have become readily available and then integrated into every part of society it has come to take them for granted, everyday objects simply bought without a second thought. Even those most worried about the environmental effects of consumption often fail to see how dependent we are on capitalism, or even make the connections with the underlying systems of production such as industry.

Affluent western lifestyles are only possible through huge exploitation of the planet and people, with most of those benefiting being sheltered from the prices actually being paid. We would argue that it has now gone deeper and has become embedded so deep into society that people cannot conceive of being short of the basics of survival. Where there are threats (eg. the fuel crisis or prolonged bad weather) the result is predictable panic buying.

Many of the choices made by us, by business and by governments on our behalf include unacknowledged assumptions that both climate change and peak resources have undermined. These choices go deeper than we are accustomed to thinking about because, as well as daily luxuries, things like roads, sewage systems and food are also all taken for granted.

People talk about the right to drive a car, to fly on holiday, to have good medical care and to eat well as if they are guaranteed in life. This is not just the elite of our society but is true of all classes. We are labelled as the internet generation, or the mobile phone generation as if communication is a given.

Even eco-anarchists can fall into this trap when they implicitly assume things will continue as they are, or consider relationships with production and resources that are too simplistic. If anything, capitalism has encouraged this ignorance (yes, even among activists) in its need to create a society of consumerism constantly growing.

The reality is none of these are rights and we are in for a set of rude shocks. Even things like healthcare are not immune. In the next few sections we will explore some of these issues, as ultimately they will become the drivers of social problems as people's expectations are undermined.

## Physical Infrastructure

Built into western society is a huge amount of infrastructure which keeps it running. Food and water are the big ones, but there is also the sewage system, flood defences, the roads network, electrical grid, etc.

None of these things exist in isolation. They need each other, they need an economy to support them, and they need to be maintained. In fact, they actually need constant investment, something that has been steadily declining in real terms. Governments and corporations have both been to blame – so nationalisation alone will not solve that problem.

For example, a lack of investment in the water system is resulting in huge wastage. Solving that, assuming the billions needed can be found, will ease the pressure on existing supplies, though it will not solve the overall shortages in the face of constant industrial growth.

Much of this infrastructure has come about because we have moved away from land based living to one where most of the population resides in urban areas. Cities need global food production to sustain them, in turn facilitated by a long supply chain with all its attendant features such as distribution warehouses communications, transport, motorways, trucks and so on.

It is efficient, but only within certain parameters such as having sufficient markets and through-put to make it economically viable, to have cheap enough fuel to keep those costs down and a road network that is up to the job of thousands of trucks moving along them every day.

This is not a system that can change overnight. Capitalism has fallen into the trap that nature uses to drive species to extinction - that of adapting too closely to a particular environment to the point that once change happens extinction is inevitable, in this case a resource and oil rich environment. There is very little flexibility in the capitalist system to permit adaptation without a lot of pain.

A further problem is the cost of infrastructure cannot be put off forever. It is vital to sustain capitalism and high energy consumer life-styles. Factories need steady power and water as well as the raw resources. The current food supply chain, based on a “just in time” model, needs a national roads infrastructure that allows fast and cheap movement of food; especially when all year fresh food is demanded. Toilets need water supplies, treatment plants and an underground system. None of this simply appears.

While it may be possible for a few to make the life-style change to bikes or cut down on travel, or avoid certain foods, scaling this up to everyone is a far from trivial exercise. Unfortunately it is a very common assumption.

It may be possible to do some transition, but with budgets being cut in the face of the financial crisis, and unlikely to be restored, maintaining current infrastructure is going to be difficult enough without building new stuff to deal with both climate chaos effects or resource shortages. Plus, people may not actually be able to afford all the infrastructure changes needed for their own homes to make such new economics work. The money is not there to pay for everything.

## Social infrastructure

Atop of the physical infrastructure sits the social one, but its dependence on the continued existence of the physical is rarely acknowledged. This artificial world of affluence is now considered the natural order, with the privileged lifestyles that shape people's politics and attitudes themselves unquestioned.

Health depends on water supply, regular and nutritious food, not to speak of the considerable infrastructure required to maintain a hospital and its network of doctors (transport, waste disposal, electricity). Such high levels of health care are affordable because cheap energy permits an economy where a greater part of income can be spent on health and good quality food, and where clean water is easily available in urban areas. Plus, that there is a sufficient surplus to invest in high end technology; in turn possible only because there is sufficient demand to warrant its development and manufacturing (along with the educational and technological infrastructures to maintain them in place). This is why there would be no point building a sophisticated, state-of-the-art hospital in the middle of a poor region, not just because it would not be able to afford the social and physical infrastructure, but because it could not be sustained either.

Heating, another key factor in standards of living and health, is also taken for granted. Many assume that there will always be the natural gas and electricity to keep homes and businesses warm. Wood burners are not a solution that scales up – where is the wood going to come from, or the steel for the burners for that matter? Felling trees to keep everyone warm is not a practical solution; apart from the fact that people do not live in houses geared up for this sort of solution. Change is not straightforward.

The welfare state, not just the National Health Service, but the various payments the unemployed and students receive, is only possible in a capitalist society that is growing. It is not sustainable in a declining one – it simply loses out to all the other debts that have to be paid.

Affluent society has abandoned more and more of the roles of a traditional community to market based solutions which come at a cost, for example, care for the elderly and the disabled. This has permitted demographic shifts and created freedoms for families and carers able to afford it.

The ability to travel further has changed the nature of communities and how lives and jobs are structured on very basic levels. There is a belief we can live anywhere, and everything we need will always in reach (helped along by easily available credit if needs be).

In turn a large chunk of the economy has been built on this privilege. The entire tourist and entertainments industries, significant players in terms of their contributions to revenue and job numbers, requires that people have the money to spend. In a recession they do well as people look closer to home, but in a longer term decline, they are not so resilient when a far greater proportion of people's income (also declining in real terms) has to go to pay for food, clothing, fuel bills or seeing off climate chaos.

## **The Politics of Green**

Over the last few years various groups have put forward suggestions as to how to deal with the individual crises. Some have even attempted combine more than one of them. Each reflects the current paradigm of their political positions. Thus we have been given green capitalism, green new deals and “just transition” all put forward as answers to the world problems.

All of them suffer from the same basic failure to 'think outside the box' and look at the bigger picture. They are focused on their own agendas rather than considering economic realities. The analyses are superficial for the most part. All, as they are currently formulated, can be rejected as failing to address the bigger pictures, even some of those being promoted by the more radical on the left. Furthermore, they remain focused on workplace economics rather than addressing access to resources.

It is fair to say that these sets of solutions are looking at the problem from the perspective of production.

An alternative approach is the bottom up reshaping of society as espoused by the permaculture movement or transition towns. Again the same set of analyses can be made. However, it remains to be seen just how scalable they are or how much latent dependency on existing infrastructure there remains. While they clearly work within limited spaces and numbers, but applying them on a large regional level bring in new sets of questions to be addressed. It is likely that future solutions will emerge from them.

All the solutions being put forward fail to address the reality of the changes that will be required certainly from a social point of view. The strategy of how we get from here to there is brushed under the carpet.

## **Consumerism**

A key debate that needs to be addressed before we can move on as a movement is the our relationship to the twin economic drivers of consumerism and production. For much of industrial history it has been production that has driven the growth of capital and its associate exploitation. This is the basis on which much of the analysis of the left, class struggle anarchists included, have founded their arguments. However, the economic structures of the mature industrialized nations of the West have moved on. Consumerism (and its associated debt economics) has become a significant driver of production in affluent economies.

The impact of this is being consistently underestimated by many on the radical left. It is often stated that in challenging the root causes of climate change, or the exploitation of capitalism there is a need to see the consumer as being somehow exploited. We disagree with this position as being based on misunderstanding of the nature of wealth creation in service-driven affluent society, among other issues. Nor does it address the degree to which class boundaries have blurred as aspirations have been encouraged. Class is still being seen in pre-WWII concepts.

The drawing of this artificial distinction causes a logical trap, assuming that it is possible to change the ownership of production without affecting the consumer. This is not possible. The changes that the financial, resource and biocrises will inflict, regardless of whether we actually manage to deal with even one of them, are going to affect everyone, including their standards of living as must happen as resource consumption gets squeezed. Failure to confront this basic problems simply opens the door to the problems of eco-fascism or green austerity measures that do not address existing hierarchies or capitalism.

Few are actually considering just what sort of standard of living could be achievable, when this is basically what is being asked in all proposed solutions, regardless of whether one is capitalist, socialist or anarchist. The approaches to date have been trivial statements about the sharing of resources or control over the workplace. We hope that after reading this pamphlet you realise just how shaky that foundation is.

There is another question that anarchists need to recognise, and that is just what amounts to privilege. Our nice standards of living come with a price – paid by others for all our pretences of stepping outside the system. When 300,000 people die a year, should our sympathy be with them or with our families living resource intensive lifestyles? When we talk about the poor, is it the relative poverty of living in the UK, or the absolute poverty of those without guaranteed access to basic needs such as water. We have to be careful that our concepts of solidarity are not restricted to parameters that are essentially on a regional or national level, rather than global.

### **Radical Social Change?**

So, when it comes to radical social change, just what do we mean? We cannot expect a smooth decline where people do not really get hurt or traumatised by the withdrawal of the crutches capitalism has given them. We cannot expect a nice orderly intervention and simple takeover of workspaces without having to worry about where the resources they depend on will be come from.

Just how far do we need to reshape the existing infrastructures supporting modern society to achieve our goals of a fair, sustainable world? How much of our politics being shaped by our own reactions to the need for change?

### **So Anarchism?**

Of all the solutions, only green anarchism comes close to a deep enough analysis of the issues. Even then, it currently is only pointing the way to how things can be transformed. There is much still to be done in terms of appreciating and communicating the depth and nature of the fundamental changes. Green anarchism's decentralised and inclusive approach provides the frameworks in which to start to consider these issues, But there is still quite a way to go. If we do not then others will simply impose their harsher solutions on everyone.

# Resources

A quick but by no means comprehensive selection:

## Books

1. *"When Rivers Run Dry,"* Fred Pearce.
2. *"Eating Fossil Fuels,"* Dale Pfeiffer Allen.
3. *"The Last Oil Shock,"* David Strahan.
4. *"Six Degrees,"* Mark Lynas.
5. *"Techno-Fixes,"* Corporate Watch.
6. *"The Limits of Growth: The 30 Year Update,"* DH & DL Meadows, J. Randers.
7. *"The Sustainability Mirage,"* John Foster.
8. *"The Evolution of Civilisations,"* Quigley Carroll.
9. *"Waste,"* Tristram Stuart

## Leading Websites

1. <http://theoildrum.com> - all-round resource on peak oil
2. <http://news.bbc.co.uk/1/hi/sci/tech/7821082.stm> (maps of current global water stress now and due to climate change).
3. <http://en.wikipedia.org/wiki/Erosion> (soil erosion)
4. <http://www.soilerosion.net/>
5. <http://www.foodsecurity.org.uk> (UK food security)
6. <http://www.wfp.org> (UN World Food Programme)
7. <http://www.ukclimateprojections.defra.org.uk>
8. <http://www.ukcip.org.uk/> (UK Climate Impacts Programme)
9. <http://farmlandgrab.org/>

## Briefings

1. [http://www.foe.co.uk/resource/briefings/uk\\_coastal\\_habitats.html](http://www.foe.co.uk/resource/briefings/uk_coastal_habitats.html) (UK coastal flooding)
2. <http://www.scientificamerican.com/article.cfm?id=phosphorus-a-looming-crisis> (peak phosphates)
3. <https://statistics.defra.gov.uk/esg/reports/foodsecurity/> (2006 UK Food Security review)
4. <http://transitionculture.org/wp-content/uploads/2007/CanBritain.pdf> (UK food self-sufficiency)

# About Us

**Dysophia** is a new imprint for publishing pamphlets and zines exploring issues around green anarchist thought in a way that makes the issues accessible to everyone. We try to avoid dense theory, but give the knowledge to empower and make up your own minds.

For us green anarchism is a powerful tool for analysing much of the world around us, from interpersonal relationships to how we take on the big problems standing between us and our ideal society. We want to educate and encourage debate, to question everything then bring it together with solutions that take us forward. We are not interested in prolonged bickering over moot points, but celebrate our diversity and our common ambitions.

It is okay to challenge each other, it is okay to disagree. Knowledge does not have to be unified, but through honest, open discussion everyone can benefit and make up their own minds.

We are always interested in feedback, suggestions of topics to cover or even ideas of articles you would like to write for us. We will try to respond to all emails, but we cannot promise, and as much as we like debate what we ideally want are direct responses we can put into future publications.

Currently available issues are

Green Anarchism: a political toolbox (Dysophia 0)

The Crisis of Crises Pt1: The Financial Crisis (CC1)

The Crisis of Crises Pt2: Peak Resources & Climate Change (CC2)

Criticism *without* Critique: a Climate Camp reader (CCR)

In preparation:

Polyamory: anarchist perspectives (Dysophia 1)

Poverty, Privilege and Immigration (Dysophia 2)

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Copies of all our booklets can be found at <http://dysophia.wordpress.com/>  
Alternatively, find us at bookfairs, infoshops and the like.