

1 why we need holistic solutions for a world in crisis



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The premise of this chapter is that our world is facing massive ecological crises, as well as the potentially disastrous social and economic problems that stem from this. In understanding how we can change our world it is important to outline some of the enormous problems it faces and every species that inhabits it. The point of this chapter is not to feel overwhelmed by the extent of the problems, but to examine existing, easy to implement and inspiring approaches that we can use to both improve the environment and the lives we lead, looking at the holistic approach of permaculture in particular as a mechanism in creating change. Sustainable living is more than just a nice life for those that attempt it. It also offers a vision of a better world, and a daily, practical protest against the cultural, corporate and state structures that lay waste to the world.

the ecological crisis and how we got here

That we are living within a rapidly escalating ecological, social, political, and economic crisis, is beyond doubt. This has been outlined rigorously over the last few decades in reports like *The Limits to Growth* (1972), *Our Common Future* (better known as the *Brundtland Report*) (1987) or landmark books like Fritz Schumacher's *Small is Beautiful* (1973), as well as the WorldWatch Institute's annual *State of the World* report (www.worldwatch.org). How we came to be in this situation is less certain. A summary of my view, informed by fifteen years of practice working with the Permaculture Association is this. From its earliest beginnings, humankind lived in relative harmony with nature, ruled by its laws, in tune with the seasons and with minimal disruption to the overall ecological system. At the end of the last ice age, climatic conditions changed and productivity increased, and humans in the Middle East, East Africa and China moved from gathering and hunting in small groups

to settled agriculture. Impacts were huge and many writers of social and human ecology such as Murray Bookchin, John Zerzan and Michael Sahlins see this as the origins of our present civilisation and its trappings such as hierarchy, division of labour, oppression, trading and specialisation, more complex social organisation, and the first cities. Ultimately these civilisations were unable to manage their resource base and failed. Reasons included soil and tree loss, the collapse of agriculture, war with competing civilisations or an inability to change inappropriate social and environmental practices. These ideas have been eloquently outlined by Jared Diamond in a number of books such as *Guns Germs and Steel* (1997) and *Collapse* (2005).

The 'Medieval Warm Period', alongside new inventions from China, such as the horse chest harness, in the tenth to fourteenth centuries enabled increases in European agricultural yields and the rapid expansion of larger human settlements. Other Chinese inventions such as gunpowder, paper, printing and the compass also had a transformative effect on medieval society. The combination of increased agricultural yields and new inventions enabled small European kingdoms to form the first nation states. Environmental and social limits were overcome through colonial expansion into new lands. The use of millions of mainly African slaves during the seventeenth century allowed companies to exploit the new lands and set up vast trading empires. During the seventeenth and eighteenth centuries inventor-scientists started to harness the power of water in new ways, with a major leap in industrial capacity occurring when the power of coal was harnessed to create steam engines. The Industrial Revolution had begun, and ushered in a new scale of environmental and social change. Companies flourished and became huge enterprises. The 'enlightenment' and other philosophical movements decided that humans were above nature and therefore it was ours to exploit as we saw fit. In the nineteenth century, we discovered a seemingly limitless supply of easily transportable explosive energy in the form of oil. Human population levels soared and a considerable middle class emerged with aspirations for comfort and a huge appetite for consumer goods (see classic works such as E.P. Thompson's *The Making of the English Working Class* (1968)). World wars, the worldwide industrialisation of farming through the petrochemical-based 'green revolution', the 'triumph of capitalism' across the globe backed by new forms of international financial institutions like the World Bank and IMF, and mass media-based propaganda completed our divorce from nature and left most humans reeling from the effects of over consumption or a life of poverty. There are many excellent commentaries which outline these changes and are included in the resources listed in Chapter 2.

At the beginning of the twenty-first century we face a huge list of interconnected challenges. Here are just a few of them:

- **Climate change:** The burning of coal, oil and gas, and the clearance of forest for agriculture is changing the climate through the 'greenhouse effect' and may soon reach a 'tipping point' beyond which humans can have no influence. There is now widespread agreement that climate change is the most urgent challenge facing the planet. The Stern report of 2006, written by former World Bank Chief Economist Nicholas Stern, suggests that there is now a 50 per cent chance of temperatures increasing by 5 °C, with catastrophic consequences for every species on the planet.
- **Peak oil:** A term popularised by scientist M. King Hubbert who, while working for the US Geological Survey, suggested that the world's supply of available oil would peak between 1990–2000. He got the date slightly wrong, but there is now wide consensus that we are within a few years of 'Hubbert's' peak, with gas peak following 15–20 years behind (Heinberg 2005). As a result of this peak the energy foundations of industrial society are dwindling. 'Alternatives like biofuels, ethanol or biomass can play a marginal supportive role but nowhere near on the scale required. When the oil runs out the economic and social dislocation will be unprecedented' (Michael Meacher, former UK Environment Minister, quoted in www.peakoil.net).
- **Water:** Water shortages and drought are becoming more prevalent, with many ancient aquifers that take thousands of years to recharge, near full depletion. 'Global freshwater use tripled during the second half of the twentieth century as population more than doubled and as technological advances let farmers and other water users pump groundwater from greater depths and harness river water with more and larger dams. As global demand soars, pressures on the world's water resources are straining aquatic systems worldwide. Rivers are running dry, lakes are disappearing, and water tables are dropping' (Elizabeth Mygatt, 26 July 2006, 'World's water resources face mounting pressure', Earth Policy Institute website). It is clear that water will be a key resource and a source of war and conflict in years to come.
- **Industrial agriculture:** Industrial farming has caused the destruction of whole ecosystems, made many species extinct and laid ruin once highly productive agricultural land. One recent example is our new demand for biofuel, which is leading to the widespread destruction of Indonesian rainforest and peatland to make way for huge monocultures of oil palm, all under the guise of an 'eco-solution'.
- **Ocean ecosystems:** Chemical agriculture, unprocessed sewerage and industrial fishing have created 'dead zones' covering hundreds of thousands of square



kilometres of ocean. The majority of fish stocks are in decline. Global fish stocks could be almost eliminated within 50 years if current trends continue.

- **Soils:** Soils have been depleted of minerals leading to poor food quality, increased disease and fire susceptibility. Poor soils and diminishing water supplies are contributing to famines that now ravage many regions and are set to worsen with climate change.
- **Environmental refugees:** The number of environmental refugees is mushrooming as people desperately try to escape from areas no longer able to meet their basic human needs. The New Economics Foundation estimate that by 2050 there will be over 150 million environmental refugees unless pre-emptive action is taken. There are many underlying causes to this refugee crisis which go beyond short-term droughts: people are forced from their lands by wars often fuelled and funded by ex-colonial masters in the West, the expansion of cash crops continues to deprive people of land and force movements, and the effects of climate change such as long-term drought, flooding or extreme weather events is increasing mass movements of people.
- **Ownership:** Corporate control of key resources and utilities, such as seeds and water, undermine local efforts for self-reliance, and fuels the growing gap between rich and poor, both nationally and globally. The profits of Royal Dutch Shell now equal the GDP of Egypt (*Guardian*, 7 November 2006). George Monbiot in *Captive State* (2000), John Pilger in *The New Rulers of the World* (2002) and Naomi Klein in *No Logo* outlined the powerful role corporations play in shaping our lives.
- **Culture and society:** Our societies are largely based on a dysfunctional cultural model which is difficult to comprehend as it is so all-encompassing. Some of its premises include: endless economic growth, the primacy of profit and growth and the need for production and hence consumption, global trade and a wage economy which fosters individualism and competition, the nuclear family and all its trappings of suburban and out of town developments, and an education system that largely trains people for participation in narrow work tasks. This leaves us largely divorced from nature and each other, at the whim of corporations, neglectful states and global institutions, and a media system in the hands of dull, powerful companies that obscures rather than illuminates.

Struggling for sustainability

Given the enormity of the problems that are faced, many people are going to ask the question 'Is there any hope?' Is it possible to fundamentally change the economic/

industrial/military system? Can we move from a society based on the pursuit of power, profit and consumption to a society that has the well-being of society and the environment at its core? Can this be done at a global level? Is it fair to curb the Western style 'development' in other parts of the world, especially Africa and Asia? These are difficult questions to answer, but in my opinion, yes there is hope. All the ideas, techniques, technologies and cultural models we need to transform the world and steward the environment for the better exist already. They have developed throughout history and can be seen through several currents.



Firstly, there are the sustainable practices of human scale societies. These groups, generally numbering less than 300, meet the majority of their needs from within their own region. Human scale societies – both nomadic tribes and settled villages – were more prevalent in the pre-industrial world and made up the majority of the human population until just a few hundred years ago. They worked less than we do, met their needs without destroying their environment and had no need for standing armies or police forces. Their whole way of life was tuned to the local environment, each generation, from children to elders, had a role to play and everyone contributed to the well-being of the whole group. Strong group identity, strict taboos and an appreciation of the 'web of life' ensured that their way of life was sustained over hundreds of generations. However, we must also be careful not to over-romanticise such human scale societies as some kind of ideal template – no doubt they faced a different set of problems, such as food shortages, occasional outbursts of bloody conflict, more reliance on manual labour, none of the comforts that mark out consumer-based societies, nor the ease of mobility that we enjoy.

Having said that there is much which our profoundly industrialised societies can learn about regaining a sense of simplicity, social integration, and cultural approaches to living within natural limits, autonomy and self-reliance. In her book *Ancient Futures* (1992) Helena Norberg-Hodge outlines how a planned process of development since the 1970s based around military expansion, tourism and resource use has undermined such human scale communities in Ladakh northern India. Here, the Ladakh Project has been set up with the aim of what it calls 'counter-development' to re-establish the viability of these human scale communities connected to the rhythms of nature and regional trade and agriculture. Strong tendencies towards these types of human scale communities clearly still exist into the present, seen through this example and moves towards ecovillages, co-housing developments and intentional communities. The interesting question that arises, and what this and other chapters address, is how do we create the conditions to make these kinds of communities more viable on a wider level?

Secondly, there are groups that have rebelled against the ideas and power structures of the time, or developed new ideas that are then adopted by society at large. Even thousands of years ago, Socrates observed environmental destruction and called for the widespread reforestation of Greece. In the seventeenth century, the Diggers struggled to create a more democratic and fair society, and show that freedom from poverty, hunger and oppression could be won if the earth were made a 'Common Treasury for all'. In the nineteenth century, the Luddites rebelled against the new machines of the Industrial Revolution but were quickly quashed by the state and the 'march of progress' (see Christopher Hill's *The World Turned upside Down* (1972) or Kirkpatrick Sale's *Rebels against the future* (1995)). By the twentieth century, the problems had become bigger, but so had the movements that sought a better way. The science of ecology led to a new appreciation of nature, organic agriculture re-emerged, natural farming was pioneered by people like Masanobu Fukuoka and Wes Jackson, and the self-sufficiency/back to the land movement was championed by John Seymour and others. Rachel Carson and her seminal work *Silent Spring* (1963) provoked a new interest in caring for the earth and an ecological movement based around membership groups like the Sierra Club, Greenpeace and Friends of the Earth, as well as direct action groups such as Earth First! emerged.

permaculture as an holistic solution

Permaculture is revolution disguised as organic gardening. (Mike Feingold, community activist and designer)

Whilst many techniques and technologies for solving specific parts of our multifaceted problem exist, there are very few integrated or 'holistic' approaches that aim to tackle the problem as a whole. One such integrated approach is permaculture. The term was coined by two Australians, Bill Mollison and David Holmgren, to describe an ecological design approach to sustainability, and has been spreading across the world since the late 1970s:

Permaculture is the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter, and other material and non-material needs in a sustainable way. (Bill Mollison 1997, ix)

Permaculture has three main ingredients:

1. Ethics

- **People care:** People care is about looking after yourself and the people around you and ensuring that your actions don't harm other people you don't see, such as when you buy food produced by workers on low wages using health damaging chemicals. It is also about considering our legacy and working to make the world better for future generations.
- **Earth care:** Opposition to further ecosystem destruction, rehabilitation of damaged land and a commitment to meet our needs on the smallest amount of land possible, so that we can leave space for all other species.
- **Fair shares:** This stresses the redistribution of skills, resources and money to enable more earth care and people care. It is also about limiting our consumption to that which the earth can sustain.



2. Ecological and attitudinal principles

Key principles include: direct observation of natural systems and an increased understanding of how they work; relative location because creating beneficial functional relationships between different elements within a system is vital; the support of important functions by many elements to ensure diversity and resilience; the provision of many functions by each element (for example a shed becomes a water harvesting surface).

3. Design

Permaculture provides a new design language for observation and action that empowers people to co-design homes, neighborhoods, and communities full of truly abundant food, energy, habitat, water, income ... and yields enough to share. (Keith Johnson, editor/writer *Permaculture Activist*).

Design is where we put our ethics and guiding principles into practice. Design is a 'pattern', a 'plan of action' that enables you to make better use of your existing resources through improved placement and new relationships, and helps you develop new ways to meet your needs. The great thing about permaculture is that you can start wherever you are, whatever your situation. If you are in a high-rise block, or a 1000 hectare farm, you can design the environment around you to become more sustainable and productive, and less polluting. You could start, for example, by growing food on your windowsill.

The Permaculture Flower in Figure 1.1 highlights these features.

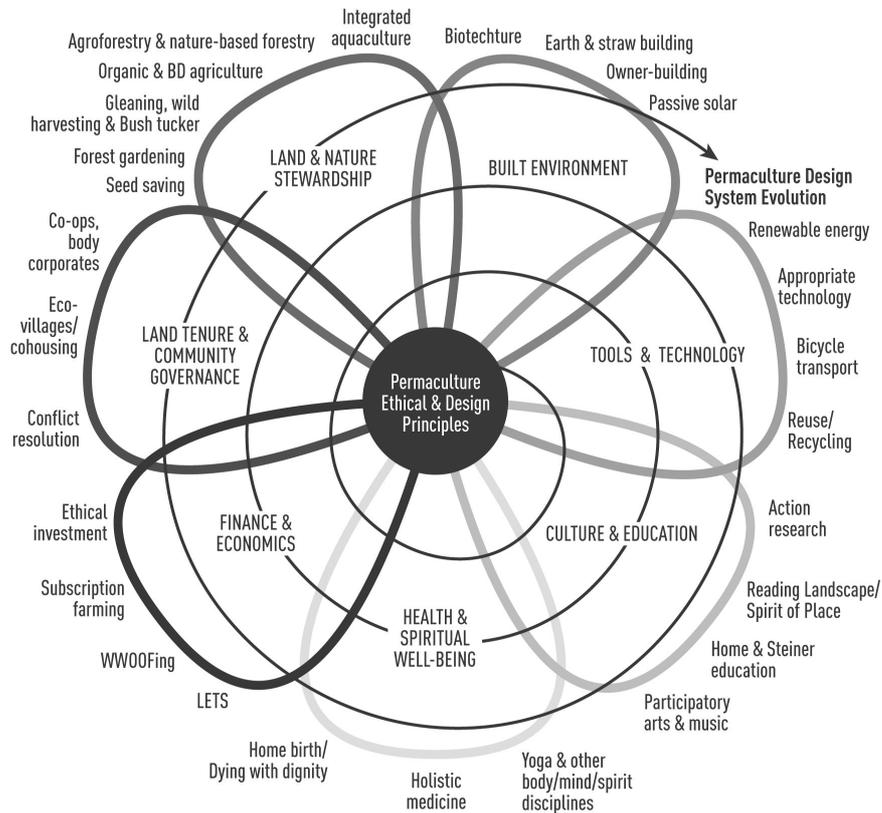


Figure 1.1 The permaculture flower

Source: David Holmgren.

Characteristics of permaculture systems

Whilst every permaculture design is unique – tailored to the specific landform, climate, and requirements of the site and its inhabitants – all designs share some common characteristics:

- Localisation. As oil and gas become less abundant and more expensive, we will need to meet our needs locally. When apples are flown from New Zealand to the UK they create up to 120 times more pollution than apples grown in the UK. So whether it is because we want to stop climate change or prepare for peak oil,

create local livelihoods or just enjoy the fruits of a productive healthy landscape, we need to localise the systems that meet our needs.

- Self reliance. Permaculture is not about self-sufficiency. I can't knit jumpers, but I'm happy to exchange the things I'm good at with others. Do what you can, co-operate with others and aim for a largely self-sufficient region.
- Decreasing the need for external inputs of energy and resources. Through the application of permaculture design and the development of local self-reliance, we reduce the amount that needs to be imported to meet our basic needs. By farming without chemicals, recycling resources locally, changing our eating habits, and celebrating and supporting local creativity we move from dependency to interdependency.
- Use of renewable energy systems. Our first aim should be to reduce the amount of energy that we need to meet our basic needs. When this has been done we can move on to develop local energy systems to meet those modest needs. Long-term forestry, passive solar construction and solar water heating are priorities, with optimum electricity generation dependent on local circumstances.
- Design as an active and ongoing participatory process. It will take a long time to create a sustainable human society, and quite a long time to get our own house in order. There is always an opportunity to improve what we do, and support others to improve what they do. I know of nowhere that is finished and fully sustainable.



sustainability in action

So how do these ideas work out in reality? There are countless examples of permaculture in practice, from the tiny to the town-wide. Long-term 'Energy Descent Action Plans' are springing up in response to crises to manage the energy descent after the peaking of oil. Based on a model developed in Kinsale, Ireland, plans are now underway in the UK in Totnes, Devon and Lewes, Sussex (see www.transitionculture.org). Four case studies follow, from the everyday to emergency situations, which show how sustainability is being put into action simply and effectively in a range of settings to tackle key issues like energy, water, food and waste.

The Yellow House, UK. 'Turning our house into an low energy eco-home'

George Marshall, environmental campaigner and member of the Climate Outreach Information Network, reflects on turning his humble house in Oxford, UK, into an eco-home.

When Annie and I moved into our new home, 1930s ex-council terraced house in Oxford, it needed a lot of work. Our dream was to renovate the house so that it is energy efficient and respects the environment, but is also clean, healthy and full of natural light. We followed the usual advice – new insulation throughout, lagging hot water pipes, draughtproofing and a new condensing boiler. We found it cost very little to far exceed the recommended levels of insulation. In the new extension and loft conversion we doubled the level of insulation required by building controls for the cost of a few hundred pounds/euros/dollars more in materials.

We managed to save money by using salvaged materials everywhere – for joists, floors, sinks, stairs, and light fittings. We built the fitted kitchen from old furniture – a beautifully made solid oak kitchen for less cost than the cheapest chipboard kind. We installed many eco-features. We have a high quality solar hot water panel. The extension has a grass roof and a sun porch to preheat the air entering the house. The bath water is stored in a copper tank (a reuse of the old hot water tank) and runs the downstairs toilet. The upstairs bedroom operates as a sun trap, heating air which is then pumped downstairs by a thermostatically controlled fan. And all paints, floorings, and timber meet the highest environmental standards.

So we managed to add two new rooms to the house and still reduce gas, electricity and water consumption by nearly 60 per cent. This is the UK Government's target for 2050 and we achieved it within one year! It is clear that soon every house will have to do what we have done. But a house is only one part of one's overall emissions. We try to achieve a low carbon lifestyle in other respects. We eat only local free range meat and local organic vegetables, rarely buy something new, work within cycling distance of home and only use a car for rare and unavoidable purposes. Providing we can avoid flying, which is a massive way to cut your carbon use, we manage to keep our annual emissions under 2 tonnes of carbon dioxide per person, which is not far off the sustainable level. You can learn more about low carbon lifestyles and work out your emissions on the calculator at www.coinet.org.uk/motivation/challenge/measure.

The most important thing we have learned is that our house can be a model for inspiring others. We had so much interest that I wrote a website so that people could make a virtual tour of the house and learn from our experience and contacts. The site has had over 10,000 hits and we get visitors and letters every week. We

have also produced a CD-ROM which can be ordered through the site (www.theyellowhouse.org.uk).



The HoriZone at the 2005 G8 summit: shit and social change

Starhawk, writer, activist, trainer and permaculture designer, writes about her experience working at the HoriZone protest camp when 3000 members of civil society gathered to protest during the G8 summit in Scotland 2005. There she developed regenerative design through compost toilets and grey water systems.

During a recent project at a large encampment, I was explaining one aspect of compost toilet maintenance to two young women. These particular toilets were basically a framework set up over wheelie-bins. The waste drop into the bins, sawdust is added after each deposit, and when it's full, the bins can be wheeled off, sealed, stored for two years, and the resulting compost is then safe to use on landscape plants and trees. It's one of many possible ways of dealing with human wastes.

'Often the "deposits" pile up in a sort of peak in the middle,' I said. "But if you reach in with a stick and push it around, you can get it to fill more evenly.'

The first young woman looked at me with a kind of horror in her eyes. "We can't even get the blokes to do the dishes," she said. "How are we going to get them to stir shit?"

I could have said, but didn't, that stirring shit up, on every level, is the basic work of anyone wanting social change.

'But it does make you think,' the second woman said. 'How privileged we are in our ordinary lives ... that we never have to think about where our waste goes or where our water goes.'

Watching that realization dawn in her eyes, I knew all the work we had done to make the camp happen was worth it.

The HoriZone ecovillage was an attempt to demonstrate, first to ourselves that we can deal with the real shit: providing for basic human needs in a way that respects and even regenerates the environment. Our directly democratic structure used at the camp was a way to also show that real work can be organized without bosses or hierarchy. Everyone participates in all aspects of the work. I carried loads of wood and drove a few screws into the compost toilets. Collective work for a big camp counters many of our societal myths about work: that hard work is demeaning, that people won't do it without pay, that work is something to be avoided, that unless people are strictly controlled, they'll be lazy shirkers. Work is a way to connect with other people, to feel part of something, and to gain respect

and recognition. Most importantly, it shows that we have the skills to manage our own lives and implement sustainable living right here and now.

Earthaven ecovillage, USA

This extract is taken from the Earthaven website (www.earthaven.org), one of the most inspiring ecovillage projects currently up and running, based in south-east USA.

Ecovillages are human-scale, full-featured settlements in which human activities are harmlessly integrated into the natural world in a way that is supportive of healthy human development, and which can be successfully continued into the indefinite future. (Robert and Diane Gilman, *Ecovillages and Sustainable Communities* 1991)

Imagine it's summer at Earthaven, an aspiring ecovillage settlement nestled in the forested slopes of the Southern Appalachians in the USA. Along with murmuring streams and birdsong, you hear the sounds of human activity, of people building their common future together, of children at play... You hear the sound of power tools and home construction, often with lumber from trees felled on the land. This is the sound of liberation. Using our own lumber and hiring each other to build our homes frees us from banks and the timber industry while keeping materials and money within our village economy. These are radical acts. We're learning to practice ecologically responsible forestry and agriculture; to develop natural building systems that sustain forest health, create jobs, and generate renewable energy through good design. We intend to become empowered, responsible, ecologically literate citizens, modeling bioregionally appropriate culture for our time and place.

Founded in 1994, Earthaven is located on 320 acres in culturally rich, biologically diverse western North Carolina, about 40 minutes southeast of Asheville. We are dedicated to caring for people and the Earth by learning and demonstrating a holistic, sustainable culture. Lying between 2000 and 2600 feet elevation, our forested mountain land consists of three converging valleys with abundant streams and springs, flood plains, bottom land, and steeper ridge slopes. We intend to become a village of at least 150 people on 56 homesites. As of 2004 Earthaven has 60 members, with 50 living on the land, including several young families with children. Our permaculture site plan includes residential neighborhoods and compact business sites, as well as areas suitable for orchards, market gardens, and wetlands.

Much of Earthaven is still under construction. Physical infrastructure so far includes roads, footpaths, bridges, campgrounds, ponds, constructed wetlands, the

first phase of our water system, off-grid power systems, gardens, our Council Hall, a kitchen-dining room, many small dwellings, and several homes. We govern ourselves with a consensus decision-making process and a Council and committee structure. We own title to our land, which we financed with private loans from members. Members pay their share of the cost of the land by leasing homesites from the community. We value sustainable ecological systems, permaculture design, elegant simplicity, right livelihood, and healthy social relations. We are spiritually diverse. We have both vegetarians and omnivores; some members raise livestock.



Our small ecologically sound businesses include Red Moon Herbs; *Permaculture Activist* and *Communities* magazines; the Trading Post, a general store and Internet cafe; a permaculture plant nursery; carpentry and home construction; tool-rental; solar system installation; plumbing and electrical installation; website design; candle-lanterns and other wooden craft items; and consultants and courses in permaculture design, natural building, creating new ecovillages, herbal medicine, women's health, and women's mysteries. We teach workshops on starting and designing an ecovillage.

Models for the future: responding to emergency situations

Writer and activist Starhawk explains the importance of developing skills to respond to emergency situations such as those seen during Hurricane Katrina in 2005, which are likely to become more frequent in the face of climate change.

In mid 2005 Hurricane Katrina struck New Orleans, followed by Hurricane Rita which hit the Louisiana coast. The U.S. government's response to these disasters ranged from inept to criminally negligent. For example when the city authorities ordered the evacuation of New Orleans, they didn't provide any transport for those who didn't have private automobiles. In the refuge of last resort, the superdome, where people were told to go, medical staff, supplies, even food and water weren't properly provided. But where the government failed, people's movements stepped in. A group called *Common Ground* arose in the first days after the hurricane, spearheaded by a former Black Panther, Malik Rahim, who lives in the Algiers neighborhood of New Orleans which was spared flooding. They first organized neighborhood protection from vigilante groups which were roaming the streets, then went on to organize garbage pickup, distribution of relief supplies, and a free medical clinic which was the first to be running after the disaster, and which has now served thousands of local people, many of whom had no medical care

for decades before the disaster, because they couldn't afford it. The clinic has a warm, friendly and respectful tone, in contrast to those eventually set up by the military and the Federal Emergency Management Agency, which were surrounded by barbed wire and armed guards. Working with Common Ground, some of us are now working on bioremediation projects in New Orleans. We have set up one demonstration project to brew biologically active compost teas that can clean toxic soil, and have launched a training program and larger pilot project in connection with a local community garden. We're raising worms, brewing bioremediation teas, inoculating wood chips with beneficial fungi, and propagating plants that can uptake heavy metals.

If we want to transform the world, we need solid models of how to do it as well as a critique of what's wrong with it. If we want people to move away from the system they know and which has always provided for their needs, they must feel confident that a new system can provide for their security and survival. In New Orleans, where the official systems failed so badly, we have shown that the methods of organizing and the skills we have learned in social movements can indeed provide for those needs, and do so in a joyful, egalitarian, directly democratic way. Natural disasters will increase with global warming. The need for protest and the encampments that go with it will continue as long as injustice continues. But when we can also grasp the opportunities in these situations of disruption for new creation, when we can truly value all parts of ourselves and see even our wastes as a resource, we can tap powerful forces of change and transformation, that can help us regenerate both the human community and the soil, and bring healing and balance back into this world.

facing up to the limits of sustainability

So what's stopping us? If the conceptual frameworks, the eco-technologies and the networks of activists are all there why haven't we turned it all around? At any one time a variety of factors make it hard for us to move forward, and it takes ingenuity to find routes around obstacles.

At a local level, when you're trying to do the right thing:

- Your local council may be obstructive, through planning constraints, local policies, or hidden agendas.
- You might feel isolated and unable to make a difference.

- You are trapped in a job, tied to the bank by a mortgage and too tired at night to think about anything else.
- You can't find land or buildings from which to develop new projects.



The most local and most serious problem occurs when you give up and don't think you can make a difference anymore. But all these limits can be overcome with persistence, clear thinking, talking to others, or turning the computer off, and then on again.

At a global level we come to more troublesome limits, as well as their potentials:

- Market forces make local production of food and many of our basic needs 'uneconomic'. However, this will change when oil shortages really kick in and render the globalised movement of goods 'uneconomic'.
- Desertification and the transformation of good quality agricultural land to poor marginal land. The development of increased water holding capacity through contour work and reseeded with hardy self-seeding plants and trees offers hope that this limit can be overcome.
- The costliness of expensive eco-technologies. However, there is usually a cheaper DIY approach, or a completely different, less technical solution.
- Disempowerment and mass hypnosis of the billion or so middle-class inhabitants of planet Earth. This group is destroying the Earth with its affluence, but has the financial resources to transform it. Every T-shirt you wear is an opportunity to get others thinking. Every 'action' and project is an opportunity to get others involved. Turn off the TV and encourage others to do so.
- Addiction. New cars, bigger lawnmowers, heroin, cannabis, TV, bigger this, bigger that, a couple of beers every night. Every time we kick an addiction, we notice another. It's good, it means we are evolving and becoming a better person. But to talk about society's addictions, to bear witness to our collective insanity, takes courage and collective action.
- Perceived lowering of living standards. Whilst American incomes have grown steadily since the 1950s, happiness has reduced. Remember the mantra, 'quality of life'. It's what everyone wants, what we all deserve, and comes about by travelling a path back to greater connection to nature.
- Legislation. Do we stop voting and do our own thing, or engage with others and change the framework within which everyone operates? A very tricky question.
- Lack of appropriate skills and education. Our children are still being taught about gravity or why the apple falls off the tree. A more thoughtful and

stimulating educational system would ask how it came to be on the tree in the first place. We need to turn state education systems on their heads. Our children really are our future, so we must ensure they are learning the skills they will need to create a sustainable one.

- Denial. We don't act for various reasons including the messages we receive from corporate funded sceptic-science which suggests everything is under control, being sidelined by greener forms of capitalism, and the psychological strength needed to accept the implications of what ecological crises means for us. None of us can be arrogant enough to think that we have all the answers. What can motivate us is how things can, and do, move quickly when the power of human attention becomes focused.

All these limits can be overcome with persistence, clear thinking, and a new sense of global co-operation.

the future

The current system is collapsing. But in the midst of this chaos, new shoots are emerging, new possibilities trembling and opportunities beckoning. We have seen a range of contexts for these possibilities, from your own house, to larger villages, camps and emergency situations. In my work I come across hundreds of groups and projects determined to do it all differently. They are improving their local environment, meeting a greater proportion of their needs and improving their quality of life. They are also helping to open up new pathways, making it easier for new people to get involved.

The skills of permaculture, natural regeneration, self-organisation and living within limits are easy to learn, simple to start and put into practice. They take persistence, a determination to break old habits, and yes, not everything works out the way we want, but each positive action links us to a new global family that has the interests of the Earth and all its beautiful inhabitants at its heart. We're not alone. Millions of people across the world are working to make things better. When you go to bed after a good day of rabble-rousing and Earth repair, others are just waking up, ready to put in another days effort. As Hazel Henderson suggested recently, the networks of people that are working for Earth and societal repair, linked by the internet, and a million small agreements to work together, are emerging to form the world's greatest, most important, new global superpower.

It's easy to get involved. Reducing your energy use through conservation measures and maybe even developing your own electricity supply means a reduction in bills, and a reduction in profits to corporate power companies. Car sharing or even better, giving up your car, means less outgoings, it means cycling, walking and taking more exercise, leading to an improvement in your own health, reduced local pollution and a friendlier neighbourhood. It makes it harder for General Motors to turn a profit. Growing your own organic food gets you outside gardening, puts you in touch with the soil and gives you valuable skills for when oil-based agriculture is no longer viable. If you can't grow your own, support local growers. Cargil and Nestle can't profit from the lettuce you sow in your window box, nor from seed you saved from the last crop. Localising production of electricity, food, fibres, biomass and the stuff of daily life means improving community well-being and developing a local economy that is better placed to survive the changes ahead. It means you take back control and responsibility for meeting your needs, which connects you powerfully to the rest of the people in your neighbourhood. Self-reliant well connected communities can resist government dictat. It also means producing less pollution and climate disrupting gases.



It doesn't really matter where you start. Follow your curiosity and passion, make it part of your life with practical action and steady learning. Celebrate your achievements and turn others on to the possibilities. There are thousands of organisations and groups to connect with, many simple practical steps you can make right now. There's not a moment to lose, it's more fun than TV, and infinitely better than putting up with business as usual.

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