THE POLITICS OF PERMA-CULTURE

TERRY LEAHY

The Politics of Permaculture

'Critical theorists often restrict themselves to criticising the prevailing conditions of the system. They rarely turn a critical gaze on initiatives based in solidarity and aiming at transformation. Terry Leahy's book is not only a proof that this is fruitful but a proof that this pathway may lead us to widen the horizon of what transformation can mean.'

—Friederike Habermann, author of the paper *Economy, Ecommony, CareCommony*

'A valuable discussion, including connections with class, feminism, colonialism and differing ideas about social change.'

—Ted Trainer, author of *Transition to a Just and Sustainable World*

'Permaculture has been described as "a revolution disguised as organic gardening". That may be so, but vision without political strategy can be empty. Terry Leahy explores the political significance and latent potential of permaculture, which is terrain that has been sorely neglected.'

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'A lucid sociological analysis, arguing that the permaculture movement is multi-variegated and paradoxical. Highly recommended for readers who are looking for a concise overview of permaculture not only as an agricultural practice but as a pre-figurative experiment.'

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The Politics of Permaculture

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Contents

Series Preface

Addressing urgent questions about how to make a just and sustainable world, the FireWorks series throws a new light on contemporary movements, crises and challenges. Each book is written to extend the popular imagination and unmake dominant framings of key issues.

Launched in 2020, the series offers guides to matters of social equity, justice and environmental sustainability. FireWorks books provide short, accessible and authoritative commentaries that illuminate underground political currents or marginalised voices, and highlight political thought and writing that exists substantially in languages other than English. Their authors seek to ignite key debates for twenty-first-century politics, economics and society.

FireWorks books do not assume specialist knowledge, but offer up-to-date and well-researched overviews for a wide range of politically-aware readers. They provide an opportunity to go deeper into a subject than is possible in current news and online media, but are still short enough to be read in a few hours.

In these fast-changing times, these books provide snappy and thought-provoking interventions on complex political issues. As times get dark, FireWorks offer a flash of light to reveal the broader social landscape and economic structures that form our political moment.

Acknowledgements

I would like to begin by acknowledging the Traditional Owners of the land on which this book was written – the Wurundjeri Woi Wurrung people of the Kulin nation. Their land was stolen and has never been ceded. I pay my respects to their elders, past, present and future.

I am very grateful to Anitra Nelson for suggesting I write this book for the Pluto FireWorks series. I never expected to write a book on permaculture. Very early on in my involvement with permaculture I had decided not to treat the movement as a subject for my sociological research. Yet, when it became clear that Pluto was intending a series on social movements challenging capitalism it seemed obvious that permaculture should be included. So, in the middle of 2019 I began to collect the interviews that are the backbone for this study. I started with my Australian friends in the permaculture movement and broadened that out to international contacts, including some people that I had never met in person. We worked with online interviews that provide an experience close to a face-to-face meeting. I am extremely grateful to these interviewees for their generous contribution and sophisticated understanding. Among my friends in Melbourne is Doni Marmer, an Indonesian postgraduate student in Australia. He introduced me to members of IDEP, the Indonesian permaculture organisation, and we conducted interviews online. One was in English and the other was

a three-way interview, with Doni translating for me. This book also rests on the work I have done for a number of years with the Chikukwa community of Zimbabwe. As always, I owe them an immense debt for introducing me to their amazing project.

In writing this book I have been assisted editorially by Anitra Nelson and by my friend Donna Russo, who have made excellent suggestions to improve the writing – making sure that everything is being put as clearly as possible. I would also like to express my thanks to my partner Pam Nilan, who has supported my research and writing over many years.

Preface

This book is about the politics of permaculture. That is not in the narrow sense of politics – meaning parties and governments – but in the broad sense pioneered by the second wave feminist movement. Politics is about contests and collaborations that guide the direction of society. That can be a depressing topic but does not have to be. Permaculture is an optimistic movement and gives us cause for optimism.

'What is permaculture?' If you have just heard of the movement and do not know much about it, you might well think that permaculture is about food growing and gardens. But if you have asked a permaculture afficionado you will have been told that *that* conception is a *mistake*. In fact, there are a variety of different ways of defining permaculture. As a sustainable system of agriculture based on tree crops, as a system of sustainable agriculture and settlement design, as a design philosophy for a sustainable society. There is much to be gained from exploring these different conceptions in detail and the next chapter will do that. Those are questions about the foundation of permaculture in ideas. But as this book will explain, permaculture is also a social movement, a body of people, their actions and the ways that they think about the world.

I come to this book after a long, if patchy connection to the permaculture movement. I first encountered permaculture in the late 1970s when *Permaculture One* (1978)

was published. I was into my fifth year of lecturing in sociology at the University of New South Wales (NSW) in Sydney (Australia). I had been a participant in the anarcha-feminist counterculture in Sydney since 1972. Our part of the counterculture was in the middle, between the hippies on one side and the lesbian separatists on the other. We squatted some old houses in the inner suburb of Glebe to start a childcare coop. Some of the people in the coop organised to buy a rural property near Taree in NSW, to be run using permaculture ideas. I am pretty sure it was these events that started me reading the permaculture material. I loved the idea of growing food plants in a forest, a diverse array of useful plants interacting together to suppress weeds and pests.

In the late 1980s I made a serious attempt to go and live on the property with my partner and our two very young children. This turned out to be a lot harder than we had expected. We left the forest in a rainy and leech infested summer, packed up the kids and headed up to Armidale. After a few years, I ended up in another academic appointment and we moved to Newcastle. By the mid-1990s, I had been teaching the sociology of environment for a decade and had begun researching the views of Newcastle locals on the environmental crisis. Why were ordinary people so reluctant to embrace an environmentalist analysis? Why was there so little pressure on governments to do something about these problems? By 1996, I was ready to take the 'Permaculture Design Certificate'. I studied with Liz Nicholson and Peter Wade at permaculture co-originator Bill Mollison's property at Tyalgum, on the north coast of NSW. Bill came along to one of our night-time

sessions and we visited the garden around his house. The whole large property was sculpted with dams, swales and plantings. It was inspiring to see permaculture landscaping on this huge scale.

In 1997 I went to my first permaculture convergence at Djanbung Gardens in Nimbin. Djanbung Gardens is the farm and home of prominent permaculture designer and teacher, Robyn Francis. This was my first experience of permaculture as a 'movement'. It was an amazing event. Robyn had landscaped an 8-hectare property as a permaculture food forest, with wild food trees and bamboo at the top and an aquaculture dam at the bottom. In the middle she had constructed a large mudbrick hexagon, to host permaculture gatherings. A cluster of reused railway carriages served for the residence. Vegetables and small livestock were sited around these buildings.

People coming to the convergence camped in tents. At night, after the business proper had concluded, we gathered round an open fire, sitting on logs. Music was provided by an improvised drumming circle. Women leaders of the movement from the Northern Rivers sat next to each other, playing their djembes in complex funk and African rhythms. The rest of us joined in, with whatever percussion was handy. Normal life had been suspended for the duration, a glimpse of utopia. I went back to Newcastle and enrolled in a djembe class. I began digging swales and contour bunds behind our house – planting the food forest. A few years later, I participated in the committee that was setting up the Australian Permaculture Association. We met at Djanbung Gardens to hammer out some of the details.

In 2003, two things moved my permaculture interests into other countries. One was that I started to supervise a PhD thesis researching a European Union project working with impoverished farmers in North Bali. In 2006, I went for an extended stay in the villages where the project was working, visiting farmers and finding out about their agricultural strategies. The second thing that happened in 2003 was that our university managed to get ten students into our Master of Social Change and Development programme. They were funded by the Australian government through a Landcare liaison with South Africa. They were agricultural officers who worked in the rural villages – where problems of malnutrition and unemployment were alarming. Their work as agricultural officers was on projects designed to relieve rural poverty through agriculture.

In later years, we had more students from Africa and also from other majority world countries, such as the Philippines, Pakistan and Mongolia. I visited the sites in Africa where our students were working and stayed in the villages. Inspired by these experiences, I developed a subject on rural food security and project design. Out of that came my first book – *Permaculture Strategy for the South African Villages* (2009). At the end of that year, I went to Africa, giving talks and distributing 250 copies of my book to agricultural officers, universities and permaculture people. I also attended the international permaculture convergence in Malawi that year. There I met representatives from the Chikukwa villages in Zimbabwe. An ambitious project of community development and permaculture had been going on there since the

early 1990s. In 2010, my sister and I went to document this project in a film, *The Chikukwa Project* (2013). The film shows how permaculture strategies can work to achieve a sustainable food security. Promoting the film, I attended the 2013 permaculture convergence in Cuba. This was a chance to understand more about how permaculture was being put into practice in Latin America, North America and the UK. In 2018, Routledge published my next book on these topics – *Food Security for Rural Africa* (2018). This second book expanded my focus beyond South Africa and brought my writing up to date with research done since the 2009 book.

This brings me to the book you are now reading – written as one of the FireWorks series for Pluto Press. Many of the books in this series are on social movements of the present period. Social movements that are *challenging* the system. I have always seen the permaculture movement as one of these. This book is designed with two major purposes. The first is to explain the permaculture movement to those who are not part of the movement but want to know more about it. I want to show how permaculture fits in relation to social movement activism in all its variety. The second is to give an account of permaculture that may help us within the permaculture movement to get a useful overview of where we are at now, a view from the grassroots.

This book on the permaculture movement has been written in the time of the Covid-19 pandemic. We in Australia have been lucky that the death rate has been low compared to most other countries due to a combination of factors. One is the relatively late arrival of the

disease here, which meant that governments in Australia knew what we might face. Australia as an island was able to block in-migration and stem new importations of the disease. The national government endorsed quite strong lockdowns. The most surprising development was a conservative national government being prepared to extend the social welfare net to reduce the economic pain of lockdowns. The failure to *adequately* cover rent, mortgages and income has meant that the lockdowns have never been completely supported by all citizens. But so far, they have been effective enough. The end result is that our government has incurred huge debts. In the near future these debts are likely to be the pretext for reductions in government services.

Worldwide, the problems of Covid-19 are exacerbated by the capitalist economy. Some sections of the corporate elite want minimal restrictions so they can continue to make a profit. The economy seems to *require* us to open up – so people can get back to earning an income. As a result, lockdowns are only half hearted and deaths soar. Yet what we are actually facing is a problem of rationing. By fine tuning a lockdown, it is possible to provide essential goods and services, enough to make sure that everyone is housed and fed *without* spreading the virus. The political problem is how to *distribute* these necessary goods and services to the people who are *unemployed* as an effect of the virus or the lockdowns, usually both – in a way that seems morally legitimate. If a government was to simply print money (without going into debt) and pay these people, the Covid-19 unemployed would seem to be getting an income *without working*. The foundation of

consent in capitalist economies is that people earn a right to goods and services by undertaking a paid job. If a very large number of people were to access goods and services *without earning the money to pay for them*, this mythology would collapse. At least, that is what the authorities are worried about. Governments cannot lockdown adequately, without undermining the ideological foundations for a market economy. So, every day, thousands of people are dying.

Permaculture writers believe that neither government nor the market can deal with the environmental crisis taking place as the growth economy hits environmental limits. The other co-originator of permaculture, David Holmgren talks about the inevitability of economic downturn in the rocky pathway to a less affluent and lower energy future. The Covid-19 pandemic represents the first major catastrophe on this road to economic contraction.

To begin with, the virus probably jumped from wild bats to humans through the trade in wild meats at a food market in Wuhan. While most media treat this as an unlucky accident, some political economists argue otherwise. As agribusiness encroaches on forest refugia, it disrupts the human communities on forest peripheries. Their trade in wild meats sources animals deep into hitherto unfrequented forest – with new disease strains. The social disruption of forest encroachment and globalisation sends some of these forest edge people into the big cities, accompanied by their novel infections.[1]

Moving further along the timeline it is hard to deny the force of this economic analysis. What followed this initial outbreak are problems created and exacerbated

by our economic structures. Globalisation means global air transport. The virus gets out of hand very quickly and spreads to every part of the world. Dense cities and crowded workplaces spread it within countries. Shutting down global trade to contain the pandemic threatens the economy, the profits of companies and the incomes of the people. Neoliberalism in the last 40 years has undermined public health services. There is no spare capacity to deal with an emergency. Medical equipment comes from factories in far parts of the world, a typical product of global supply chains. Any break in the chain becomes a huge problem.[2]

To grasp the homology between the Covid-19 crisis and other environmental problems, it is salutary to consider the opposition to effective action. Opposing action on climate change, the fossil fuel industry funds a campaign that draws in people worried about jobs. The pro-business media styles itself as the courageous adversary of 'elites' – the doom and gloom scientists with their gullible trendy allies. The opposition to the Covid-19 lockdowns is engineered by the same unholy alliance. Sections of the business community fund legal challenges and a media campaign. They mask their own economic motives, standing up for the ordinary masses, supposedly fighting for their freedom against the tyranny of medical experts.

As David Holmgren writes, the Covid-19 crisis reminds us of the frailty of the global market economy. People are thrown back on their household economy and begin to experiment with non-monetary provision:

> A home-based lifestyle of self-reliance, and minimal and slow travel does not provide protection against getting a virus as infectious as COVID-19, but it can provide a base that is stimulating and healthy, rather than a place of detention. Behaviours such as self-provision, buying in bulk and minimal travel not only reduce ecological footprints and stimulate household and community economies, they also 'flatten the curve' of infection, thus giving the health system the best chance of responding to those in need and reducing the numbers of people desperately dependent on government aid and assistance.[3]

As the collection *Pandemic Solidarity* (2020) explains, the failure of governments and the markets to deal with the pandemic has inspired people in all parts of the world to develop networks of mutual aid – alternative to the mainstream economy. Collectives of garment workers sewing masks and distributing them in their communities, free provision of food to the vulnerable and unemployed, local food production and seed saving.[4] These temporary expedients give us pointers to long-term alternatives.

Many key works of permaculture suggest the necessity to abandon urbanism and locate people in loosely connected rural towns, with government devolved to town councils and bioregional networks. Most production would be for local consumption. Towns would provide their own food, housing, energy and local transport, as well as repairing almost all machinery. A year-long lockdown, isolating each town, would not have to be a huge inconvenience. Access to all necessities would continue to be provided locally. Exchange of some high-tech machinery parts could

be suspended for this period. For medical supplies and collaborative development of a vaccine, transport could be via a train system, with locally enforced quarantine measures. Communication via the net would facilitate a global and national response.

The account of the permaculture movement offered in this book is sociological. That means that I aim to relate the permaculture movement to research on social movements conducted by sociologists. At the same time, this is not a particularly academic book. I intend it to introduce the permaculture movement to those who are not participants and to provide a pause for reflection for people in the movement itself. Is this a book of 'social permaculture'? Yes, in part. 'Social permaculture' is variously interpreted, but at the very least it aims to help permaculturists to make successful interventions in society – by attending to the social issues that arise when you are working with other people.[5] In the case of this book, I have aimed to situate permaculture interventions and the permaculture movement in relation to broader social contexts. This can certainly assist us to make more effective interventions.

So, what methods am I using to conduct this analysis? For those who are not trained in sociology, the methods we use can seem random and unscientific. It may help to explain the reasoning behind them. One part of what I am doing here is teasing out the implications of key permaculture writings. Mostly these are writings from the permaculture 'canon', the books by Mollison and Holmgren, the founders of the movement. The second source for material in this book is a set of interviews with 19 participants in the movement. I aimed to recruit inter-

viewees who were *not* major leaders of the movement. I felt that the views of important leaders of the movement were already available in their books.[6] It is vital to get a sense of permaculture at the grassroots. I recruited people that I know in permaculture and went online to discover lists of permaculture people in other countries. I used my connections to Facebook friends from overseas that I had met at convergences. In the end, two of these interviewees must be counted as 'leaders' of permaculture. Andy Goldring has for many years been the chief executive of the UK Permaculture Association and April Sampson-Kelly was elected to the board of Permaculture Australia shortly after I interviewed her. These 19 interviews are supplemented by prior interviews with permaculture participants in Africa, from research conducted for the documentary *The Chikukwa Project.*

My approach to these interviews is typical of the sociological method. Such a randomly collected small sample of interviewees is insufficient for quantitative statistical analysis. But it makes sense for a qualitative study. What I am looking for is the available public 'discourses' that the interviewees make use of. For example, in what way do interviewees make sense of the different definitions of permaculture?[7] The logic of a qualitative sociological approach is to look for a 'saturation' of data. This occurs when a research question gets a recurring set of answers from different interviewees. In other words, these answers are being found to 'saturate' the field of possible responses.[8] This is what I looked for in these interviews.

I am supplementing the information given by these recorded interviews with knowledge formed through a

'participant ethnography' of the permaculture movement.[9] I have been a participant in the permaculture movement for decades, for instance going to my local permaculture club, running the club as president for a number of years, taking students to visit permaculture properties, researching international projects inspired by permaculture, attending national and international convergences of the movement. What this means is that the 19 interviews I have used here are *illustrative* of the information I have already gathered informally via years of participation in the movement.

I treat these interviews as authoritative narratives, as 'oral histories' from the movement.[10] It is not assuming too much to believe the accounts these interviewees give of *their own* practice. Though these accounts are not necessarily totally accurate, they give us a very good guide to the reality of permaculture as perceived by these interviewees. Together, these accounts construct a reliable enough picture of the operation of the movement.

Can permaculture save the world? This book investigates this and more. What do permaculture authors and people in the permaculture movement think they are doing? How do people organise their lives around permaculture? How does this work out for them? How does the movement hang together and organise itself? What are the strategic choices of the permaculture movement? Is there a permaculture approach to system change? Does it work? What would a society run by permaculture look like? How does permaculture relate to other movements? To the left, to feminism, anti-racism, the environment movement?

The chapters of the book cover different aspects of the permaculture movement. The first chapter is on the various definitions of permaculture and the way that interviewees make use of these. The second chapter is on permaculture as a social movement. What are the organisations, people and things that make up the permaculture movement and how are they connected? The third chapter is on the strategies for social change that the permaculture movement promotes and the visions of a permaculture utopia that attract permaculture people. In the fourth chapter I look at how these strategic options work out in practice. How do permaculture initiatives forward permaculture goals and also maintain themselves in a market dominated economy? The fifth chapter considers critiques of permaculture from the perspectives of anti-colonial and feminist politics. What is being said and how is the movement responding? A final chapter concentrates on my own thoughts on all these issues.

CHAPTER ONE

What Is Permaculture? Three Perspectives

INTRODUCTION

'Permaculture' is the name given to an approach to agriculture and environmental sustainability by its two founders, the Australians, Bill Mollison and David Holmgren. Together, they wrote *Permaculture One* (1978).[1] This defined permaculture as a system of permanent agriculture, making use of *perennial* plants.[2] Since then, these founders have written two further interpretations of permaculture.[3] In the *Global Gardener* TV series and in

the *Designers' Manual* (1988), Mollison describes permaculture as sustainable agriculture and settlement design, accompanied by an ethics of care. This was effectively a second definition, corresponding to a second wave of popular interest in permaculture.[4] Holmgren's book, *Permaculture: Principles and Pathways Beyond Sustainability* (2002), initiated a third wave, broadening the concept of permaculture again. That book defined permaculture as a design system for a sustainable society – informed by the permaculture ethics already established in Mollison's previous writings.[5]

Other authors have also popularised and interpreted these ideas.[6] The differences between these writings mean that there is no *one correct way* to interpret permaculture.

PERMANENT AGRICULTURE

Permaculture One (1978) emphasises the replacement of annual crops with perennials, enabling 'an integrated, evolving system of perennial or self-perpetuating plant and animal species useful to man [sic]'.[7] The term comes from the two words 'permanent' and 'agriculture' – indicating an agricultural system that can be carried out in perpetuity – an idea usually expressed now by the term 'sustainable'. Mollison and Holmgren reassure the reader that they do not want to do away with all 'annuals': 'It is taken as understood that normal gardening for annuals is part of a permacultural system.'[8]

So, what is this distinction between annuals and perennials? Annuals set seed every year (annually). They die off in winter. Most domesticated crops are annuals

– wheat, rice, barley, maize, sorghum. High-yielding varieties can be selected year after year, quickly leading to very productive crops. In nature, annuals usually grow in disturbed ground, producing a lot of seeds and springing up quickly to fill a gap. The annual plants domesticated by people are no exception. With agriculture came ploughing – digging up the ground so cereals could be established.

In contrast, perennial food plants endure for years and years. These are all the trees, bushes, vines and perennial grasses of human agriculture – nuts, fruits, tubers, bamboo, sugar and some vegetables. These plants do not require extensive soil disturbance. A small hole is followed by a planting, and years of production follow.

Strategies of 'Permaculture One'

Permaculture One lays out a variety of strategies by which we may replace annual crops.

- Replace cereal carbohydrates with nuts and fruit.
- Grow tubers in the shade of a food forest.
- Grow perennial vegetables.
- Feed small livestock from the excess produced by the food forest.
- The forest also provides timber, fuel wood and fibre.

As Mollison and Holmgren explain, a hectare devoted to nut crops can produce as many food calories as a hectare of wheat.[9] This reform of agriculture has also been proposed by other authors with names such as 'food forests', 'forest gardening' or 'perennial polycultures'.[10]

Reasons for an agriculture based in perennials

The world's soil resources are the accumulated humus left by previous forest systems. Early forests have now been cut down and the soil they created is used to establish pasture or annual crops. This is not sustainable. Ploughing loosens soils, allowing erosion. Beneficial micro-organisms are killed when exposed to heat and sunlight. This cultivation is using fossil fuel energy.[11]

- A polyculture of plants is resistant to pests. They do not have a whole field of the same species in which to proliferate. Companion plants provide habitat for pest predators.
- Different species use different niches in the ecosystem – trees grow high to catch the light while shade lovers populate the understorey.
- Because land is not exposed to full sun, water use is more productive. Trees transpire water that seeds rainfall.
- Nutrients are recycled from trees to the forest floor and back again – there is no need for synthetic fertilisers.
- Weeds are managed by competition from rampant but useful plants.
- If one species is attacked by pests, it does not mean that the productivity of the food forest as a whole is damaged. The other parts go on producing food.

So, these were the strategies of 'permaculture' in 1978. Permaculture drew on ethnobotanical studies of tradi-

tional societies to envisage the replacement of cereal crops with perennials. The authors credit pre-colonial societies with many of the ideas now presented as permaculture.[12]

The food forest definition as 'branding'

By defining and 'branding' permaculture as a system of perennials the founders clearly separated their preferred agricultural system from other alternative agricultures. For example, 'sustainable agriculture', 'organics', 'biodynamics', 'agroecology' 'regenerative agriculture'. Subsequent definitions struggle to achieve the same clarity about what is *distinctive* in permaculture.

Why include annual cereal crops in a permaculture design?

By 1979, when Mollison wrote *Permaculture Two*, he had begun to accept that grain crops could be grown sustainably.[13] He cites Fukukoa's *One Straw Revolution* (1978) – planting grains into a mulch of cut stalks to eliminate erosion and compaction problems 'seems to have solved the problems of no-dig grain cultivation'.[14] Mollison synthesises Fukuoka's strategy with work coming from sustainable agriculture science and much traditional agricultural practice – the use of intercrops with legumes as 'the essential plants to fix nitrogen for the grain crop. A grain/legume diet gives … complete protein'.[15] By 1991, Holmgren had also acknowledged the logic of this change in definition.[16]

AGRICULTURAL DESIGN

The next canonical work is Mollison's *Permaculture: A Designers' Manual* (1988)[17] produced along with his TV documentary series, *Global Gardener* (1991).[18] These two works were well received in Australia's burgeoning environment movement. Mollison also spread these ideas through international tours. Permaculture education was consolidated through the *Permaculture Design Certificate (PDC)*. This qualification was initially taught by people who had been Mollison's students in permaculture. After two years of practical experience, a graduate of the PDC was considered qualified to provide training and to certify their own students with the PDC – implying an exponential growth in the number of permaculture teachers and graduates. The basic text of PDCs was the *Designers' Manual*.

In *Permaculture: A Designers' Manual* Mollison defines permaculture in two sentences, the first sentence defining permaculture as *designing* to achieve *agricultural* sustainability. 'Permaculture (permanent agriculture) is the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems.'[19] *Maintenance* is included, implying that the ongoing execution of permaculture design is part of permaculture. The content of agricultural knowledge inevitably becomes part of permaculture. As a later part of this chapter will show, permaculture careers are built on designing *and* implementing agricultural strategies.

This first sentence locates permaculture as a strategy for *agriculture*. If we think the sentence is talking about a 'food forest' it is easy to understand. A natural forest has a diverse range of species. It changes fairly slowly. It is resilient despite fluctuations in the weather. We can imagine an agricultural system like this, combining elements necessary to keep an ecosystem running and also choosing useful plants.

In this new definition of permaculture, what has changed most from 1978 is that there is no *explicit* mention of perennials – because Mollison now believes it is possible to grow grains sustainably. In the *Designers' Manual*, there are indeed some sections that deal with grain agriculture. The chapter on design strategies for the wet/dry tropics considers traditional staples such as maize, wheat and millet. For these he recommends no-till, mulching and green manure.

Yet you could exaggerate the extent of this change. For example, a diagram shows a transition from contemporary Western agriculture (a cereal monoculture) to permaculture. Following this transition, 70 per cent of cropping land has become 'forage farming', 'replacing animal forage grains with tree crop, increasing forest cover … and producing some (if not all) fuel on the farm'.[20] Another passage makes the claim that permaculture systems are like natural systems in that they cycle and renew themselves over a very long period whereas 'annual cropping' renews itself in one season. 'Permaculture thus uses the time resource much better than annual gardening alone'.[21] The implication is that 'permaculture', *based in perennials*, is an alternative to 'annual cropping'. The chapter on

cool and temperate agricultures has almost no mention of grain crops. So, this new definition de-emphasises food forest farming – but without completely giving up on perennials as central to permaculture design.

There is a potential problem with this first sentence definition. 'Sustainable agriculture design' is agricultural science. So why have a separate framework and call it 'permaculture'? I will come back to this.

The second sentence

Mollison's second sentence broadens permaculture substantially to 'the harmonious integration of landscape and people providing their food, energy, shelter and other material and non-material needs in a sustainable way'.[22] Here we are not just talking about agricultural systems but about every kind of technology – energy, metalwork, ceramics, digital IT, so long as it can be done sustainably! Permaculture becomes equivalent to the whole environmentalist movement. The goal of the environmentalism is exactly this – the harmonious integration of humans and (non-human) nature to provide for our needs sustainably. Yet in fact, 'permaculture' does not *actually* replicate the whole environmentalist movement. What permaculture writers *do* talk about most is sustainable agriculture design and (occasionally) sustainable 'settlement' design.

Permaculture ethics

Mollison specifies permaculture ethics in a set of recommendations. These have been widely taken up in the movement and constitute a key aspect of permaculture identity:

> CARE OF THE EARTH: Provision for all life systems to continue and multiply.
>
> CARE OF PEOPLE: Provision for people to access those resources necessary to their existence.
>
> SETTING LIMITS TO POPULATION AND CONSUMPTION: By governing our own needs, we can set resources aside to further the above principles.[23]

In a later work, Mollison changed this third principle as follows:

> DISTRIBUTE THE SURPLUS: Contribution of surplus time, money and energy to achieve the aims of earth and people care.[24]

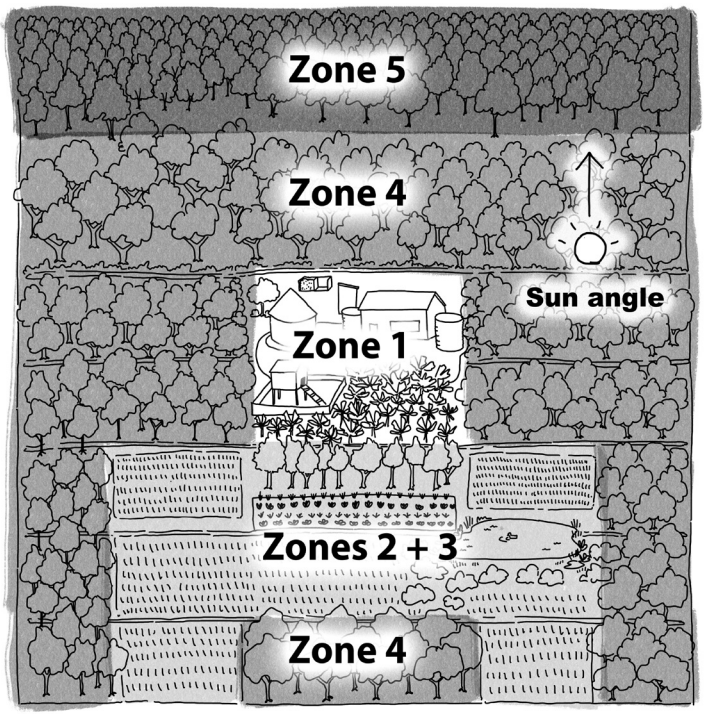
The first principle is related to what has been called 'deep ecology'.[25] It recognises members of other species as having 'intrinsic worth'.[26] The principles are also related to what feminist and environmentalist writers have called an 'ethics of care'.[27] To do good is to look at particular situations rather than following any set of universal moral rules. We see how we can care for others through what we do.

The structure of the Designers' Manual

As we have seen, the second sentence of Mollison's new definition of permaculture equates permaculture to the whole of environmentalism. Yet in its content, the *Designers' Manual* focuses on *agricultural* design, with a supplementary focus on settlement design.[28] The

first chapter defines permaculture and its ethical basis. Chapters two, three and four give principles of design, using examples from farming. For instance, in Chapter three, the 'zones' are functionally distinct locations on a farm, radiating out from the house (Zone 1), through various agricultural zones (for example, orchard, cropping field) out to an uncultivated natural forest (Zone 5).

The sectors are the locations of influences on the farm relevant to agriculture – for example, where is the sun coming from, wind directions. Chapters five to nine are topics directly connected to agriculture – climate, soils, earth working. Chapters ten, eleven and twelve consider three climatic regions – the humid tropics, drylands and colder climates. Each of these chapters concentrates on sustainable agriculture for that climate zone. In each, there are brief sections on settlement design. For example, three pages on settlement design and 43 on agriculture in the chapter on colder climates. Chapter thirteen is on aquaculture. Chapter fourteen considers social structures for a sustainable society. The vision here is new age settlers coming together to constitute a post-industrial society. Some industrial production is certainly envisaged in the *Designers' Manual* but is never the focus of advice. For example, nothing on how mining, a steel works and a transport system might sustainably provide the equipment we see in the diagrams. In other words, while the second sentence of the definition of permaculture suggests a very broad scope, the detailed content of the *Designers' Manual* concentrates on agriculture.



An example of permaculture zoning, family farm, Africa. The farm slopes down from the house and faces the sun. Zone 1 – house, kitchen rondavel, small livestock, water tanks, washing up stand, storage, toilet, compost bins, kitchen herbs, banana patch. Zones 2 and 3 – orchard, vegetable beds, cereal crop, aquaculture pond. There is no separate Zone 3 for a commercial crop. Surplus production from Zone 2 is sold at the local market. Zone 4 – fuel wood, timber, forest harvests, nuts, avocadoes. Zone 5 – biodiversity refuge. This area is reserved for locally indigenous plants and animals.

DESIGN SYSTEM FOR SUSTAINABILITY

The most recent phase of the permaculture movement comes out of Holmgren's influential book, *Permaculture: Principles and Pathways Beyond Sustainability* (2002).[29] This book continues the drift away from permaculture defined as an agricultural strategy. Instead it develops a set of 'design principles' relevant to *all* decision making. This development is foreshadowed in the *Designers' Manual*: 'Permaculture, as a design system, attempts to integrate fabricated, natural, spatial, temporal, social and ethical parts (components) to achieve a whole. To do so, it concentrates not on the components themselves, but on the *relationships between them*, and on how they function to assist each other.'[30]

Holmgren draws on these ideas to define permaculture. He explains that the original (1978) definition of permaculture as perennials has lapsed and in current understanding, 'permaculture' refers to 'consciously designed landscapes' that provide for local needs. Also included are 'people, their buildings and the way they organize themselves'. An evolution from permanent agriculture to permanent culture. However, this can be so 'global in scope that its usefulness is reduced'.[31] Holmgren's solution to this problem is to narrow down permaculture by defining it as a design science: 'the use of systems thinking and design principles that provide the organising framework for implementing the above vision'.[32]

In other words, permaculture is to be that part of the movement towards a sustainable society that provides systems thinking and design principles. In this, there is

an intensification of Mollison's emphasis on design, with a corresponding diminution in the necessity for permaculture designers to be knowledgeable in the nuts and bolts of agricultural practice. They will be 'designing' rather than 'implementing'. Holmgren explains the principles as 'brief statements or slogans which can be remembered as a checklist when considering the inevitably complex options for design and evolution of ecological support systems'.[33]

They are universal but will be applied differently according to context. Their scientific foundation is systems ecology, a branch of systems theory. Systems theory is concerned with the relationships between elements that make up a system. Permaculture design brings together 'physical, social and conceptual components into a beneficial assembly of components in their proper relationships'.[34] Holmgren cites Lovelock and Margulis' concept of the earth system as 'Gaia'. Reductionist science, which seeks to understand things as constituted by simple elements, is 'now an impediment to human survival'.[35]

Donella Meadows, an environmental scientist, provides a useful introduction to systems theory, describing a system as

> a set of things – people, cells, molecules, or whatever – interconnected in such a way that they produce their own pattern of behavior over time … an interconnected set of elements that is coherently organized in a way that achieves something … a system must consist of three kinds of things: elements, interconnections, and a function or purpose.[36]

The 'function' of a system can be just its tendency to produce its own pattern of behaviour over time. Even a rock could be seen as a system of interrelated parts that together maintain coherence. *Living* systems have 'purposes'. At the most basic, to live. The parts of the system function to maintain the system as a whole – for example, the lungs to oxygenate the blood. Permaculture is typically concerned with systems constructed by humans to serve the purposes of the designer – for example, to produce food.

The point of the principles is to help the designer to engage in systems thinking as they consider the design and evolution of 'ecological support systems' and to provide 'a door into the labyrinth of whole-systems thinking'.[37] *Principles and Pathways* is organised around the principles – each chapter explores a principle.

1. Observe and interact
2. Catch and store energy
3. Obtain a yield
4. Apply self-regulation and accept feedback
5. Use and value renewable resources and services
6. Produce no waste
7. Design from patterns to details
8. Integrate rather than segregate
9. Use small and slow solutions
10. Use and value diversity
11. Use edges and value the marginal
12. Creatively use and respond to change

Each of these is accompanied by a traditional bon mot. For example, 'Catch and store energy' is linked to 'Make

hay while the sun shines'. Holmgren's principles have been well received in permaculture. Many activists use them in teaching and design work. Unlike a recipe for making a cake, they are not a set of concrete instructions. By thinking about a principle in relation to a concrete problem, you are provoked into new thinking that may be helpful. This is the structure behind Holmgren's *Principles and Pathways* itself. Each principle becomes a hook for a range of topics – the way natural systems work, the ecology of traditional food systems, ecological thinking in agriculture, social problems.

Some of the principles come from environmentalism – 'catch and store energy'; 'use and value renewable resources'; 'produce no waste'. Others are inherent in the scientific method – 'observe and interact'; 'apply self-regulation and accept feedback'. Others fit with holistic systems thinking. 'Obtain a yield' (ecological support systems are constructed with a purpose in mind); 'design from patterns to details'; 'integrate rather than segregate'.

Other principles respond to and express common ideas of our culture today. 'Use slow and small solutions' is a response to the market economy. Market success is realising the value of money *as soon as possible* and making *the most* money. The market tends to forget that some things require a slow and a small approach. So permaculture reacts by advising us to consider the slow and the small. 'Use and value diversity' goes back to John Stuart Mill's defence of free speech. It recommends thinking outside the square. In agriculture it is about the problems of monocultures. 'Use edges and value the marginal' has a basis in ecology and resonates with the critique of the

dominant culture that permaculture undertakes. 'Creatively use and respond to change' is a mantra of business thinking that also makes sense for permaculture.

I see the principles as provocative catch phrases that may unlock fixed patterns of thought. The unlocking itself comes from knowledges that are much more particular. Considering the principle, 'use edges and value the marginal', Holmgren writes of the change in Europe from small-scale farming to large-scale monocultures. The effect was to eliminate the edge provided by hedges in traditional agriculture. By reducing edge, 'costs of management and labour were reduced' and in some cases higher yields were obtained. This process went along with the use of fossil fuel to power monocropping. What was sacrificed were 'environmental values such as wildlife habitat, and rural resources such as wild foods, herbs and construction materials'.[38] Informing this discussion are particular knowledges. The political economy of monocultures. Peak oil and global warming. Conservation biology. The history of the English poor.

Permaculture has from the beginning emphasised interrelationships in an agricultural system. As well, as Meadows notes, systems *thinking* is pervasive even when it is not explicit.[39] The attack on reductionist science, the emphasis on *relationships* rather than separate *things,* is a critique of Western culture that has a purchase in much thinking today – ranging from Vandana Shiva's postcolonial ecofeminism to relational ontologies in the 'new materialism'.[40] *Principles and Pathways* is part of this wave. Nevertheless, it may be that our problems are not always failures of philosophy. As Holmgren's discussion suggests,

it was not just a lack of systems thinking that destroyed the hedgerows in England. It was at least in part the structures of the market economy that made monocultures attractive to farm owners.

Typical chapters of *Principles and Pathways* continue at least some of the emphasis on agriculture we see in the other canonical texts. At the same time there is more room given to discussion of the environmental crisis. Chapter 'Principle 11: Use edges and value the marginal' is 16 pages in total. Seven pages are on sustainable agriculture, three on ecology, two on the environmental crisis, four on social issues.[41]

This chapter also shows that the application of the principles is very flexible and adapted to particular contexts. Permaculture design often maximises edge by putting waving lines around gardens. However, these sinuous edges are not appropriate for large farms – appropriate design is straight farm fences to facilitate construction.[42] As in a Tarot pack. The 'death' card is not necessarily a literal death. Another example cites shopping streets as edge, the glass fronts of shops facing onto the street. Shopping malls go further, creating endless corridors that 'maximise the exchange of money for goods'.[43] Clearly, Holmgren does not think that shopping malls are a paradigm of permaculture in practice, even though they do maximise edge. Accordingly, implementing a principle, whatever the context, is not always ideal: 'the important issue is the appropriate use and application of edge'.[44]

Principles and Pathways provides us with one way to solve the problems of the definition thrown up by the *Designers' Manual.* Permaculture is about designing

anything at all which is necessary for a sustainable society. What distinguishes 'permaculture' from 'environmentalism' is that permaculture is a 'design system' for sustainability, drawing on the insights of systems theory.

PERMACULTURE AS ANALYSIS OF THE ENVIRONMENTAL CRISIS

A different approach to what truly makes permaculture distinctive from other parts of the environmentalist movement would point to its particular understanding of the environmental crisis and its particular vision of sustainable agriculture and settlement design. A key aspect of this distinctive analysis is conveyed by the term 'energy descent' from Holmgren's writings.[45] Permaculture believes that we cannot expect to go on using the same amount of energy that we have been using in the rich countries. The inevitability of energy descent has implications for consumption and the technological direction of future society. Permaculture is most concerned with the implications for agriculture but is aware that this is just part of the story. The following four points are taken from the *Designers' Manual* and are evident in all three canonical texts.

1. Permaculture recommends local agriculture for local consumption

Permaculture believes that energy supplies should be local and that most production should be localised: 'truly responsible conservationists have gardens which support

their food needs, and are working to reduce their own energy needs to a modest consumption, or to that which can be supplied by local wind, water, forest, or solar power resources. We can work on providing biomass for our essential energy needs on a household and regional scale.'[46]

The section on sewerage recommends treatment using a series of ponds growing algae, supporting fish and purifying water in reedbeds. The final safe product can be used on fields and forests to supply nutrients and minerals.[47] These designs fit with the vision of localisation – the nutrients in local sewerage are not wasted but recycled without the necessity to bring fertilisers to distant farms. Summing up these recommendations, Mollison lays out a vision of local self-sufficiency 'using our skills to integrate food supply and settlement, to catch water from our roof areas, and to place nearby a zone of fuel forest which receives wastes and supplies energy'.[48]

Permaculture has little faith in the capacity of renewable energy systems to provide sufficient energy for a globalised industrial culture. We are facing *energy descent*. Without fossil fuels, we cannot transport food and fertiliser to and from cities and a rural hinterland. Localisation is inevitable.

2. Permaculture recommends a diverse polyculture agriculture with an emphasis on tree crops

Crops of cereals and annual vegetables are to be only a small part of the cultivated land. An emphasis on perennial crops for agriculture is defining in *Permaculture One* but remains in later permaculture works. The texts also argue

that forests are most likely to provide much of the renewable energy used in a sustainable society. As explained above, early parts of the *Designers' Manual* suggest that permaculture is recommending the replacement of cereals with perennial crops, even though this is not explicit in the definition.[49] This is a strategy explained and defended in relation to energy descent. Fossil fuels will not be available to transport the products of large monocrop holdings, as feed stock for fertilisers and pesticides, or to power huge farm machinery ploughing vast acreages.

In the *Designers' Manual*, Mollison also tells us that pasture or cropland is the least productive use of land and that grain crops are the major source of erosion in every region of the world.[50] He introduces the humid tropics with this overall plan: 'We can largely emulate the tropical forests themselves in our garden systems, establishing a dominant series of legumes, palms and useful trees with a complex understory and ground layer of useful herbaceous and leguminous food and fodder plants.'[51] The section of the book on the wet/dry tropics includes a discussion of grain crops as a small part of an overall system dominated by tree crops. The chapter on temperate areas contains hardly a mention of grain crops.

This emphasis on perennials distinguishes permaculture from much of sustainable agriculture science and the sustainable agriculture movement; writings that imply the continued dominance of cereals in our food supply. Permaculture envisages much more diversity in carbohydrate provision.

3. Permaculture recommends villages and farmsteads in a rural setting

Permaculture suggests the replacement of large cities with a more distributed settlement pattern. The diagrams from the *Designers' Manual* illustrate this rural focus. Twenty-eight pages show farm households surrounded by their farms. Three pages show a clustered rural village surrounded by agricultural land. Other diagrams are of house designs or parts of an agricultural landscape. There are *no* cities or suburbs. It may be considered that Holmgren's *RetroSuburbia* (2018) goes outside this framework.[52] I see it as giving recommendations for the immediate future, with the expectation that many suburbanites will ultimately leave the city.[53]

The *Designers' Manual* is scathing on the environmental problems of cities. Cities 'return little energy to the systems that supply them and pass on their wastes as pollutants to the sea, they are not in exchange but in a localised one-way trade with respect to their food resource. All cities break the basic "law of return".'[54] Rural bioregional associations can provide all basic needs and through such connections, villages and farms can govern themselves.[55]

This anti-urban bias in permaculture goes against mainstream thinking on sustainability and against much of the environmentalist movement. Most of the environmentalist movement believes that cities can be made sustainable, and ideas for redesigning urban transport, waste disposal and energy production are pursued – along with ideas for bringing some food production into the cities. In Mollison's *Designers' Manual*, these options are

not considered to be feasible. Again, in contrast to much environmentalist thinking, permaculture argues against the view rural lands should be emptied of the destructive impact of people.[56] Permaculture aims at repopulating the countryside. Farms and villages are to be surrounded by wild uncultivated areas, with an informed stewardship. The farming land itself is to be a haven of biodiversity. More detail on the options for a rural civilisation will be provided in later chapters.

4. Permaculture recommends political decentralisation as the best social system

The *Designers' Manual* opposes centralised hierarchical states. According to Mollison, there are three social orders based on a permanent agriculture. In feudal permanence peasants are 'bound to the landscape by unremitting toil, and in service to a state or landlord'.[57] The eventual outcome is famine and revolution. The second social order relies on pastoral or cereal monocultures. Their fate is desertification. The third permanence is agriculture centred on forests, which require 'generations of care … a tribal or communal reverence'.[58] The great danger is that imperial states cut these forests, reducing the population to 'serfs in a barren landscape'.[59] Permaculture aims at local autonomy premised on a forest-based agriculture. 'To let people arrange their own food, energy, and shelter is to lose economic and political control over them. We should cease to look to power structures, hierarchical systems, or governments to help us, and devise ways to help ourselves.'[60] Mollison envisages independent rural villages cooper-

ating as bioregions. A network of 'economic summits, bioregional congresses, tribal conferences, garden and farm design groups'. Avoiding centralised administration and paid staff 'we avoid power blocs', independent of government funding 'we avoid inefficiency'.[61]

Permaculture's rejection of the state is not shared by all environmentalists. George Monbiot calls for a world government.[62] The 'Steady State' economists propose state regulation of population, resources and incomes.[63] Ecosocialists want central planning.[64] Permaculture is closer to the bioregionalism proposed by Kirkpatrick Sale and to the energy descent writings of oil peak theorists.[65] Other close companions to permaculture are some anarchists and degrowth advocates who also propose rural self-sufficiency and political autarchy.[66]

HOW PEOPLE IN THE MOVEMENT UNDERSTAND PERMACULTURE

The people I spoke to, with very few exceptions, defined permaculture by criteria that could apply to any part of the broader environmental movement. Despite this, examples tended to focus on agriculture. A key common element was to mention the importance of permaculture as a *design* science. It was a common view that defining permaculture was not an easy matter. 'I have had for decades on my computer a document that I call, "struggling towards a definition of permaculture"', reported Karryn (USA), 'it took decades of learning and teaching permaculture before I felt like I had something.'

As an integrative multidisciplinary approach

Permaculture is often credited as an integrative approach, meeting a range of concerns. Sayu, at IDEP in Indonesia, had this to say:

> I think permaculture is answering all the gaps. So, all the issues about the environment, about social, about livelihood – where if I had previously learned from each of the disciplines, there would have been no answer to the needs of the community. (Sayu, Indonesia)

Karryn made a similar comment on her experience of the PDC:

> Like you go to college and I was so frustrated with my MPA and my Masters and before that of course also, because it's all silos right, and life is not silos, life is highly integrative so this was the first time … there was a framework for understanding so I felt so alive and happy. (Karryn, USA)

As designing for environmental sustainability

The strongest theme was that permaculture is about environmental sustainability and can be applied to any aspect of life.

> I would say that permaculture was a lifestyle where you aim to reduce your waste and increase your produc-

> tion and by doing that you have reduced your footprint. (April, Australia)

Here April relates sustainability to a personal choice to live sustainably. The mention of increased production suggests agriculture and self-sufficiency.

> A design system … where we build systems that are good for people and animals and the community ... We see the principles as being integral to all parts of our life. (Kate, Australia)

In this account, Kate references the permaculture ethics of earth care and people care. She makes it very clear that permaculture applies to aspects of life outside of farming.

> It's a design system, to help us to create a way of living that does not destroy the planet … it is a way of understanding our story in relation to the land and other people. (Alice, UK)

Alice explains permaculture as a design system that covers *the whole field* of environmentalism – creating a way of living that does not destroy the planet. On the other hand, redefining our relationship to the land links permaculture to agriculture.

> A lens through which you can view the world. So if you've got a project or you face something in your own home life, like trying to set up an allotment or trying to

> plan a wedding or whatever, permaculture is like a lens that you can view those issues through. (Jasmine, UK)

Jasmine identifies permaculture as a design system. Her examples include one agricultural example, setting up an allotment, and another which is the production of a social event.

> So, I always start with the word 'permaculture', permanent agriculture, permanent culture. Living like we want to live on this planet for a long time. So, it's this idea of a durable culture. (Andy, UK)

This is one of the few explanations of the concept of permaculture in my discussions with permaculture people that refers directly to the emphasis on agriculture that we find in *Permaculture One* and the *Designers' Manual*. Despite this, Andy instantly broadens his explanation to also imply environmentalism in toto.

Permaculture as a systems approach – lessons from nature

Permaculture was often defined as a systems approach to design. Linked to this was the idea that permaculture design draws ideas from the natural world.

> It's a design system because it encourages you to think about the whole system and in that way, it draws from ecological thinking where you think of individual elements in relation to each other. And then you've got some nifty principles that guide your understanding …

> like having one element supported by many … like the idea of generating circular inputs … maximizing the productivity within the system. (Mim, Australia)

Mim references her own background in ecological science to claim permaculture as based in that knowledge. The discussion is closely related to *Principles and Pathways* and the specific examples, such as multiple function, circular flows, are also present in the *Designers' Manual.* In other interviews, the term 'design' science is used.

> It's a design science. I have had some people argue with me that it's not a science, but actually, I would say, yep, it's a science. But it's not a set thing, it's very holistic and we just don't understand all of it. All of the interactions. (April, Australia)

The discussion implies a systems approach, looking at interactions between components and coming up with a holistic analysis.

Accounts which see permaculture as taking lessons from nature sometimes claimed this as the distinctive feature of permaculture.

> It's often misunderstood as being organic gardening or farming practice. In my understanding it's more a way of looking at how everything is based on natural principles. Looking out into nature you can find pretty much all the answers. (Petra, Indonesia)

This discussion suggests a particular method for achieving sustainable design. Take principles from nature and apply

them. Similar interpretations of permaculture were given by other interviewees:

> Usually how I approach it is I say it's a method … of holistic design, effectively around productive and sustainable living systems, where we're making observations of how different elements of nature, relate and co-support each other and … you're applying those in your system design. (Lachlan, Australia)

It was rare for participants in permaculture to explain how the natural (non-human) world *provides* us with models of how to set up our human productive systems. Jasmine began by saying that permaculture is a 'design process'. It begins with principles based on what we observe in natural ecosystems. We use these ecosystems as models. For example, the principle 'catch and store energy' comes from what we observe when we see how water collects in a lake or how a tree takes energy from the sun. So, this principle is easy to explain:

> Because, whether it's a house and you're catching roof water, whether it's your garden and you're using plants to accumulate minerals and fertility, or you're applying it to the people side, where, we all know that burnout affects grassroot groups, and so then we say, well what do I need to catch and store energy? (Jasmine, UK)

'Catch and store energy' is from *Principles and Pathways*. The term 'energy' is being broadly interpreted as 'resources'. The principle is a hook for memory. The agricultural examples are central. Permaculture believes in

local storage of water through contour bunds, ponds and rainwater tanks – rather than relying on fossil fuel powered water reticulation systems. Permaculture suggests planting 'bio accumulators' to bring minerals in soils to the surface, where they can provide trace elements for plants. Permaculture suggests planting legumes to draw nitrogen from the air, storing it to fertilise our crops – rather than using synthetic fertilisers.

Permaculture as ethics

Two interviewees defined permaculture almost exclusively in terms of ethics specified in the *Designers' Manual*, the *Introduction to Permaculture* and *Principles and Pathways*. Doni from the Indonesian permaculture centre, IDEP:

> Actually, if we talk about permaculture, we should talk about permaculture ethics first, then we see and do it based on the ethics so that everything will benefit, so when talking about surplus, there are actually three new ethics about how we relate to nature, then how we relate to others, then the latest fair share. (Doni, Indonesia)

Mark similarly defined permaculture in relation to its ethics:

> It's an environmental movement predicated on an ethic of care for the earth, care for people and the return of excess. (Mark, Australia)

For Mark, permaculture does not *equate* to environmentalism, it is one of a number of environmentalist

movements. The *particular* ethics of permaculture define it as distinctive. As other interviews indicated, the opposition is usually between permaculture, which attempts to create systems that are productive for humans *and also* care for the planet, and other environmentalisms, that can be 'misanthropic' as Alice put it.

Permaculture as sustainable agriculture

Permaculture as sustainable agriculture is at least half of what Mollison says to explain the concept of 'permaculture' in the *Designers' Manual.* Consequently, it is not surprising that it was evident in three of my conversations with people in the movement. The speakers are all marginal to the current permaculture movement. Damien from Australia has undertaken introductory courses in permaculture, but never completed a PDC. He has also worked in developing countries assisting with medical interventions.

> I'd say it's a design system, an agricultural design system. It is based on positive kind of relationships. Like the way that you lay out a permaculture garden is you design it, rather than just as with organic gardening or monoculture gardening where you say, I'm just going to plant here and follow organic principles. (Damien, Australia)

As April said, a core of permaculture teaching is to equip students with the ability to *design* a permaculture site. The teaching notes of Jasmine in the UK are chapters that take students through the steps they will need to design their

agricultural property – for example, drawing a map, zone and sector analysis. It is very common for the PDC course to include a mini project where students design and map a proposed agricultural site.

Dave from the UK similarly has had a long-standing interest in permaculture and has taken introductory courses but not the PDC. He has worked for decades in development education and is a key member of an NGO that works with schools and universities. As part of their outreach they have set up a food forest on the roof of their building, bringing in a permaculture designer. They also establish community gardens for development education.

> I tend to not go to all this kind of stuff that kind of stuff, so I talk about observation, and learning from nature, and getting the maximum yield. And turning problems into solutions. Things I particularly focus on and then we have our tours in the various gardens where we implemented those kinds of principles. So, keeping it simple. (Dave, UK)

Dave does not think he has to actually point out that permaculture is about agriculture, it is assumed in this discussion. He eschews what he sees as more theoretically informed explanations of permaculture that may confuse people. Instead, he explains it by talking about concrete agricultural examples. The principles he is talking about are from the *Designers' Manual* and are also present in *Principles and Pathways*.

As a final example, I will consider the way the term 'permaculture' is used by people involved with the CELUCT

(Chikukwa Ecological Land Use Community Trust) organisation in Zimbabwe.[67] In this developing country context, there is no doubt that 'permaculture' is a term used for a body of *agricultural* knowledge. One indication is the way in which the term is used in accounts of the founding of the project.[68] These all talk about problems with soil erosion, deforestation, crop yields and water supply. The 'Strong Bees Natural Farming' group decided they needed to do something about the springs drying up. They called in a permaculture specialist to help them with their agricultural problems:

> There was a little permaculture centre which started at that time in Harare, Fambidzanai ... So, we came up together with some ideas and we started together with the community to have a little introduction into permaculture with focus on how to deal with resources. (Elie, Zimbabwe)

This is just one version of similar accounts. The accounts go on to explain that following these workshops the villagers constructed swales, fenced gullies and planted trees to deal with their resource problems. In all of these accounts, the term 'permaculture' is being used to refer to a body of knowledge related to sustainable agriculture. Another indication of this agricultural use of the term 'permaculture' took place in an interview with leaders of the project. Phineas is talking about a village mediation process that involved 'SA' staff from CELUCT. He explained that 'SA' stands for Sustainable Agriculture and went on to identify

this as CELUCT's core business. Elie immediately clarified this as 'permaculture, permaculture'.

Chester, the head of CELUCT at this time, explained the rationale by which CELUCT had set up other community organisations to deal with non-agricultural problems.

> The whole idea is that at CELUCT, while we are addressing the food security issue, we look at the whole person. And in the process, if you look at one thing and ignore the other you may not achieve that food security thing. So, we try to address issues of HIV, the social groups of women with their needs, and then we have the preschool, we have the BCCR [Building Constructive Community Relations].

So, the core business of CELUCT is sustainable agriculture – aka permaculture. Supporting that work, CELUCT has established a number of *other* departments. This explanation assumes the distinction between permaculture as a body of *agricultural* knowledge and other concerns.

There is a final use of the term 'permaculture' in the project. People referred to CELUCT as 'the permaculture'. An example is July, talking about advice on soil erosion and soil fertility:

> During the late eighties, our field has been eroded by runoff, so we had poor harvests, due to the fact that the topsoil was going away. So, we have to search for some advices. And we got advice from the permaculture.

In every case, use of the term 'the permaculture' to refer to CELUCT itself was connected to some agricultural advice or support.

My experience at the international convergences in Malawi (2009) and in Cuba (2013) is that this agricultural usage of the term 'permaculture' is dominant in developing countries. The understanding of permaculture as a design science for the whole of life has not really caught on in much of the developing world. This makes sense in relation to the history of permaculture internationally. Its first spread into developing countries was in the late 1980s when Mollison and other Australian permaculture teachers went to developing countries to assist with agricultural projects.

PERMACULTURE AS PRACTICE, AS A CAREER

A key topic of my interviews was to ask how permaculture had influenced the lives of the interviewees. In every case, the answers were mostly about two things – specific agricultural projects and permaculture teaching. In several interviews, these career narratives also included one or more examples that were not exclusively agricultural. The complexity of these responses is best conveyed through examples.

Petra

Petra has been the CEO of the Indonesian permaculture NGO, IDEP since its founding and only recently resigned. IDEP was prompted by the economic crisis at the end of

the Suharto regime. Balinese rice farmers were getting into debt buying synthetic agricultural inputs. Petra saw permaculture as a solution. An early IDEP project was to deal with problems for an Indonesian village affected by unsustainable logging. The project helped farmers to move to organic farming, making improved livelihoods because they were not having to pay for pesticides. The women of the village began producing and marketing organic inputs. IDEP as an organisation moved on to disaster relief projects following the Bali bomb. In Aceh, their organisation assisted people displaced by the tsunami. They used a 2-hectare school site as a 'living lab' for sustainable agriculture technologies and helped people to establish food gardens. Petra also advises tourist resorts wanting to establish permaculture gardens. IDEP has recently developed a business selling organic food seeds. Since leaving IDEP, Petra has joined a company promoting an app to connect farmers and markets.

Alice

Alice studied ecology at university. Her first involvement with permaculture took place when she was working in Palestine on development. She and her friends decided to set up a 'permaculture farm' as a demonstration site and leased land to do that. After a number of years, conflict within the group saw Alice leave the farm. She went on to work getting consultancies to help design people's permaculture gardens in Jordan and Sinai. She took up a position with an NGO working with the Bedouin and helped set up a permaculture centre in a Bedouin village.

Later she worked on ecological rebuilding in Gaza, the sole example of a project of hers that did not involve agriculture. Returning to the UK, she and some friends have established a Community-Supported Agriculture (CSA) farm in Wales.

Jasmine

Jasmine had finished a politics and economics degree in the UK and was backpacking in Australia. She decided to do the PDC at Crystal Waters, an intentional rural community and went on to make her career in permaculture. She got a contract to design a community garden and shortly after that bought a 7-acre smallholding in an ecovillage. She set up a forest garden and large glass houses for vegetables. She and her partner grew soft fruits and vegetables. They had sheep, pigs and ducks. Her main income was through teaching. As her partner was an eco-builder, she oriented her PDC to people who wanted to learn building from him. The production from the farm was available for meals for their students and they produced ten boxes of vegetables every week for the people staying with them. There was sometimes a surplus for sale. The training manual she wrote for her PDC teaching concentrates on the process of designing a permaculture agricultural site. Since she and her partner left the ecovillage, she has been working on training people in body awareness – seeing your body in relation to ecosystems. In this most recent enterprise, she has moved away from a permaculture career based on agricultural production.

Lachlan

Lachlan began his journey into permaculture after finishing a degree in conservation biology. He preferred to work in something outdoors and with his hands where he could see the improvements he was making in the world. He started a business in environmental landscaping and decided to orient it to permaculture, undertaking the PDC with a local trainer. He consults people on permaculture garden design and maintains and installs permaculture gardens in consultation with his clients. For example, a backyard food forest, a community garden, a small acreage on a bush block. More recently he has begun teaching the PDC and runs his courses at times convenient to his students. Though he is renting, he has installed a permaculture food garden, with poultry, in his backyard.

These are a few examples of permaculture careers from my interviews. What they show is that professional permaculture activists are almost always involved in some kind of agricultural project as an expression of permaculture. There are clearly cases where their work goes outside this framework, for example, in Jasmine's body work teaching. However even in such cases these examples are just a small part of a total career.

THE PARADOX OF PERMACULTURE

Permaculture has been a very effective social movement despite the changes in the concept of permaculture through the three canonical texts. The idea that permacul-

ture actually takes on the whole of the environmentalist project is misleading to this extent. Texts and activism are mostly concerned with agriculture. But in another way, it makes perfect sense. Permaculture writing has a particular vision of what a sustainable society would look like. This vision implies that much of the environment movement is on the wrong track.

The false equivalence between permaculture and environmentalism can be thought of as a figure of speech called a 'synecdoche'. In a synecdoche, the spoken words mention a part when the whole is actually intended. For example, the expression 'suits' meaning businessmen. A synecdoche also occurs when the whole is mentioned but the part is intended. For example, 'America' can be a term used to refer to the United States, which is only a *part* of America. Speakers can be aware that a synecdoche is not meant to be taken literally. In permaculture, explicit accounts of the concept suggest permaculture as a design system for the whole of the environmental movement – when the reality is that agriculture is the key concern. Within environmentalism, permaculture has a distinctive central concern (agricultural design) and a distinctive, though by no means unique, ethics (deep ecology, ethics of care) and vision of sustainability (degrowth, energy descent, bioregionalism, anti-state).

What happens when permaculture activists end up in an encounter with environmentalism taken as a whole? One strategy is to reserve the term 'environmentalism' for parts of the environmental movement that one opposes. Andrew talked about how he perceived the difference between permaculture and 'environmentalism':

> Conservation and restoration ecology aren't about local livelihoods … They're about yuppies taking their golden retriever for a walk … If you look at the nature conservancy, look at environmentalism, they largely are about protecting natural areas for the sake of voyeurism … What environmentalists are saying is let's continue with business as usual but let's mitigate the impacts. Of a petrochemical, manufacturing, producing … And I'm saying, no, we actually need to retrofit the entire infrastructure, to be regionally self-reliant.

So, there is 'permaculture' on one side and 'environmentalism' on the other. Andrew is one of the permaculture interviewees who most strongly includes non-agricultural production as part of his permaculture training:

> We're bringing together these worlds that often times in permaculture classes aren't synthesized so much. Like I have influences and bring in people like Amory Lovins, William McDonough and then a lot of building and infrastructure knowledge, so an urban application.

In this passage, Andrew shows his endorsement of authors who do not identify as permaculturists. Lovins investigates sustainable industrial production. McDonough is associated with 'cradle to cradle' industrial production. The 'worlds' that Andrew talks about are the sustainable agriculture world of permaculture and the sustainable industrial production world of these writers. To be consistent with the usage in Andrew's first quote, Lovins and McDonough cannot be 'environmentalists'. So, what are they?

Another pertinent example is Andy's discussion of recent directions for the UK permaculture movement. Andy is the CEO of the UK Permaculture Association. When I asked Andy about the changes in the meaning of 'permaculture', he argued that these different versions are not incompatible:

> I don't think it stops being an agricultural design approach with perennial plants. That's still an absolutely key element within something which is now broader. I don't think there is necessarily a contradiction, I think it's just an emerging of a discipline really.

His own (current) account of permaculture is that it is about sustainability, based on the three elements of permaculture ethics, learning from nature and a design approach. This makes it *equivalent* to environmentalism, taken as a whole. He avoids a contradiction between this and earlier versions of the concept by saying that this current broad understanding *includes* the earlier versions. Like Russian dolls. Sustainability includes sustainable *agriculture*. In turn, sustainable agriculture includes *perennials*. While this explanation is quite defensible what has happened in this transition is that permaculture has expanded in what it claims to cover, *taking over* the whole of environmentalism.

Later in this interview, this broad approach to permaculture – as equivalent to environmentalism – is challenged. Andy explains that in the current global crisis, it has been advisable for the permaculture movement in the UK to look for like-minded allies.

> If I want a permaculture future, the Permaculture Association can't do that on its own. So, who else is working towards an earth care, people care, fair shares future? Community based solutions, much more local autonomy, you know the kind of permaculture style agriculture, energy systems etc. We need a different society. For example, we need a different energy system. We need to work at a societal level and recognize that a lot of other organisations have a similar analysis and are part of the puzzle. (Andy, UK)

So, permaculture is not the only grouping that is constituted by some version of 'permaculture ethics'. Andy mentions groups involved in this alliance, such as the Solidarity movement and Transition Towns. What distinguishes these tendencies from permaculture is that their de facto sphere of operations is *not just agriculture*. Transition Towns aims to include local industry in local self-sufficiency. Industrial cooperatives are the emphasis in Solidarity. Andy is aware that permaculture activists have neither the skills nor background to set up a renewable energy system – this would depend on industrial workers and engineers. This recognition is signified in the phrase 'permaculture style agriculture', making it clear what permaculture can bring to this table.

WHAT'S IN A NAME?

It may be that there are certain problems for the permaculture movement in masking its agricultural focus. It becomes difficult for newcomers to understand what is

distinctive about permaculture. The ethics of permaculture are not too different from those promoted by other parts of the environmentalist movement, for example, eco-socialists, eco-anarchists, steady state economists, ecofeminists, postcolonial indigenous activists, the Green parties. A systems approach is not all that unusual in the broad environmentalist movement. As for design, it would be strange if people producing things did not *design* them. Attending to design in the context of sustainability could be considered to be part of what any sensible environmentalist would do.

A few interviewees mentioned the problem that practitioners might not have been adequately trained in the nuts and bolts of sustainable farming.

> I do feel it becomes a bit formulaic … I've met so many people who've done the PDC who theoretically, they could even do training in that kind of work, but they couldn't actually grow anything … So even permaculture, you know there's a danger that it becomes almost ideological. (Dave, UK)

The agricultural focus of permaculture is apparent in practice and in most instruction but is not validated at the level of theory. The danger is that newcomers can be swept up by permaculture theory and forget to learn the nuts and bolts of agricultural practice.

> And the other thing I've encountered from quite a lot of growers is this kind of irritation with people coming off PDCs and thinking that they like know everything

> and telling people how to run their smallholdings that they've been running for years and years … What people are saying is that there's a lot of woolly thinking and obnoxious know-it-all … Like if you really want to be a grower, go and apprentice with a grower. You're not going to be a grower by the end of a two-week PDC. (Alice, UK)

Students who have learned the theory may think they have the capacity to give advice on concrete matters in which they have no real expertise. Natalie, who works in Norway, was critical of the way some permaculture novices believed they could be experts on agricultural matters without adequate training.

> I grow a serious amount of vegetables and I take from organic agriculture, sustainable agriculture, agroecology, and weave that together with permaculture. And I find like permaculture people who might not know how to farm yet, constantly questioning me about why I weed. And why am I planting in rows and there aren't mandalas? Permaculture doesn't necessarily teach you how to grow vegetables. It's a world view or an approach to begin to learn how to grow veggies. And when they are saying, like I shouldn't be weeding, because permaculture says there are no weeds in permaculture, or you don't have a slug problem. Yes, I have a fucking slug problem, I may not have any ducks but yes, I have a slug problem.

Her reference is to an oft quoted comment of Mollison's. Farmers don't have a slug problem; they have a duck

deficiency. She went on to criticise permaculture for perpetuating 'folk myths' not backed by agricultural science.

> Look we need to be not just being anecdotal about things. If you've got research, do it and write about it. Have a control plot and have the options and be doing a scientific study. Permaculture has these folk myths. That continue to exist among people. They do a PDC and that's all they do – they don't know how to garden. Yet. They have an idealistic idea about their garden.

She continued by explaining why she could not have ducks on her rented field. She is solving her slug problem by buying nematodes, an integrated pest management product. A form of biological control.

> And I just find that a lot of people doing permaculture don't yet know about those products that are available. But organic farmers do, and agroecologists do.

It is something of a puzzle that permaculture as a movement has been able to maintain two concurrent fictions. One is that permaculture is a design system for *every element* of a sustainable society. In other words, its scope is as wide as the environmental movement itself. The other fiction is that permaculture is not primarily focused on agriculture. This is an example of a 'filter bubble'. People primarily interact with others who are part of their filter bubble. People who are in the permaculture movement primarily interact as activists with other members of the movement. While they will be aware of other parts of the environ-

ment movement, they compartmentalise this awareness when they come to defining permaculture. Likewise, they are perfectly well aware that their own permaculture practice and that of other permaculture people is focused on agriculture. But in defining permaculture theoretically, they assume this as a background that does not need to be mentioned.

CHAPTER TWO

Permaculture as a Social Movement

Permaculture can be conceived in a variety of ways. As *a social movement*, permaculture is a body of activists who are networked together, joining in both digital and face to face social space, and sharing some key ideas. Alberto Melucci's foundational text in the study of the new social movements characterises their first defining feature as 'a form of collective action which involves *solidarity*, that is, actors' mutual recognition that they are part of a single social unit'.[1] A second way to conceive permaculture is as

a *discourse* – a way of thinking and acting connected to a set of writings and media.[2] Those who identify as 'permaculturists' are loosely linked by practices which draw on the ideas in the canonical texts discussed in Chapter 1. Finally, permaculture may be seen as a social movement that shares some features with *cults*, such as following the charismatic leadership of permaculture's founders, and formal initiation through the Permaculture Design Certificate. This chapter suggests that permaculture is best understood by keeping all three of these interpretations in mind.

AS A SOCIAL MOVEMENT

Sociological analysts explain social movements as made up of 'participants' – not 'members'[3] – who identify with the movement and are recognised by others as participating. I will generally refer to these people as permaculture 'activists'. You do not have to go through a formal process of recruitment. The permaculture movement also includes *organisations* with permaculture goals. Five types of organisation are common. One is the permaculture 'business'. Almost always, this is teaching permaculture, doing landscape design, gardening maintenance or organic farming – often two or more of these options. They are usually run by an individual permaculture participant (or couple). They may also employ some staff or be assisted by volunteers or apprentices. They typically have a website or Facebook page identifying them as 'permaculture'.

A second organisational form is the permaculture community group, a voluntary group of enthusiasts who

meet on a regular basis (usually monthly) and exchange ideas, host talks and meet for site visits. Activists may help each other with voluntary working bees (permablitz). These community groups are usually named after their locality – for example, Permaculture Hunter Region. A third organisational form is the national peak body, which aims to represent all the movement and their organisations. It is a form of NGO and may aspire to coordinate permaculture training. There is formal membership and often some paid staff.

A fourth organisational form is a national journal or magazine. These exist in some countries. They depend financially on subscriptions to pay a professional staff. A fifth kind of organisational entity is the NGO working on development problems and identifying 'permaculture' as their guiding framework. These are professional organisations, funded by international donors, staffed by employees and depending on voluntary support within local communities.

Members of these organisations are not the only participants in the movement. People can participate without being in any permaculture organisation. Altogether they and the participating organisations are an 'assemblage' – to use a term from the 'New Materialist' framework.[4] An assemblage includes the physical objects involved in permaculture as 'participants' – their interactions with other elements critical to forming the movement.[5] For example, the agricultural sites used by permaculture participants, the plants and animals, the swales and garden tools. So, the permaculture movement *assemblage* is a network linking different kinds of social and physical elements. These

connections are not abstractions, but manifestly demonstrated in the activists' stories of their everyday practice.

So how does the movement operate? I think that Alberto Melucci, a key figure in the sociology of social movements, offers a useful summary in explaining that the social spaces of a movement contain various groups in embedded 'fragmented' networks 'submerged in everyday life' as if 'cultural laboratories'. Participants explore and experiment, developing their own cultures. People may be activists in more than one social movement at a time, their involvement in any particular activity of the movement may be temporary. Being active and personally involved is what makes someone a part of the movement.[6]

To illustrate this, we can look at some examples of permaculture organisations. The social movement organisation 'identifies its goals with the preferences of a social movement … and attempts to implement those goals'.[7] In social movement analysis, organisations are networked with other organisations and with individual participants to constitute the movement as a 'complex assemblage of diverse actors'.[8] So permaculture organisations link up to community members, governments and other community organisations. I will give four examples from the interviews, the CELUCT organisation of the Chimanimani district of Zimbabwe, the UK Permaculture Association, the Center for Bioregional Living in the USA, Purple Pear Farm in Australia. A network perspective understands social movements as 'a web of relationships'.[9] I will use these vignettes to illustrate the social networking that constitutes the permaculture movement – 'within these networks, individuals interact, influence each other,

negotiate and hence establish conceptual and motivational frameworks for action'.[10]

CELUCT

CELUCT is the acronym for the Chikukwa Ecological Land Use Community Trust. This was the organisation that was formed for the Chikukwa clan community of six small villages, with approximately seven thousand people in all. I interviewed villagers and stayed with CELUCT in visits between 2009 and 2014. The clan is living in Zimbabwe on the border with Mozambique and a national park. The district in which they are situated is the Chimanimani district. Their land is owned as community title and held for the community in trust by their chief. In practice, families own land and pass it on to their children. Most food production is by households for their own consumption.

The origin of this organisation illustrates the operation of permaculture as an international social movement. In the 1980s Mollison travelled to Africa to spark interest in permaculture. In Zimbabwe, the national permaculture association 'Fambidzanai', located in Harare, was initiated by John Wilson who had met Mollison during his tours. John Wilson had experience as a high school principal in the Chimanimani district where the Chikukwa clan were living. Friends from that connection were Elie and Ulli Westermann, who were also teachers in the district. In the early 1990s Elie and Ulli moved to the Chikukwa villages to teach there. It was at this time that the environmental problems of the clan became pressing – soil erosion, poor

harvests, soil compaction, the loss of tree cover, the drying up of the springs on the hillsides.

Elie had set up an organic vegetable garden for her household and joined with other neighbours to form a small community group – to support each other in their agricultural endeavours. This group was called the 'Strong Bees'. They invited the other villagers to assist them to restore the springs. At first, the working parties tried digging down to access water. Later they invited John Wilson to run permaculture workshops to help with their problems. Representatives from all the villages were invited. The community acquired a truck load of vetiver grass and materials for fencing. Working parties constructed large contour bunds to curb erosion and infiltrate water. They fenced off gullies, placing check dams and planting indigenous trees. On the ridges they planted fast growing trees to infiltrate water. Further work was done by families to increase the productivity of their household agriculture. CELUCT was formed as a community organisation to maintain and organise this. Community volunteers built the CELUCT centre in the early 1990s, a place for organising the community activities, demonstrating agricultural technologies and hosting training visits.

The organisational structure of CELUCT is twofold. One part is a small team of staff, mostly funded by international donors. These are typically recruited from the Chikukwa villages or they are teachers working in the community. For example, the director in 2014 was Chester Chituwu, who had been a local primary principal. The other part of CELUCT consists of representatives from community groups. For example, the permaculture club in

each village. Representatives are chosen by villagers in an 'open day'. The club meets regularly and sends an elected officer to meetings of CELUCT management. To get assistance, villagers prepare a proposal to take to CELUCT. A similar organisational structure covers other aspects of community concern, with sets of village clubs organised under the CELUCT umbrella. Each of these concerns and the village clubs associated with it are referred to as 'departments' of CELUCT – a women's department, a department for people living with HIV/AIDS, a youth department, a preschool, a department for mediation of community conflicts.

We have seen how CELUCT has been founded through links to permaculture as an international social movement. At the same time, it sprang up locally rather than being created by any central permaculture body. Within the community it has depended on social organisations that already existed – the education departments, the local chiefly families, the agricultural extension service. None of these has dominated CELUCT, but they have all assisted it. Internationally, it has depended for funding on two organisations. One is the Tudor Trust (UK), funding grassroots initiatives for marginal communities. The other is a German Protestant organisation (DEE). DEE saw CELUCT as an organisation tackling some of the underlying causes of civil violence. CELUCT had been established for five years before being willing to accept overseas funding – on the condition that it retained community control.

We can also consider CELUCT as networking *out* into the permaculture movement. CELUCT inspired a dis-

trict-wide local NGO, TSURO, located in the nearby town of Chimanimani. Ulli Westermann was involved in this from the beginning. This district organisation works with 120,000 people and also promotes permaculture solutions. CELUCT and TSURO sent representatives to the 2009 international permaculture convergence in Malawi. They presented their work to an audience of 300 permaculture people from around the world. In consequence, two Australians (myself and my sister, Gillian) came to Chimanimani in 2010 to document CELUCT and TSURO. The film, *The Chikukwa Project*, premiered at the international permaculture convergence in Cuba in 2013. It is used in permaculture training in many countries. CELUCT has also worked with other African communities to implement permaculture. It hosts training visits and sends representatives to consult on problems.

In all of this, permaculture acts as a network of interacting semi-autonomous units. An organisation has sprung up locally, based on loose friendship connections, consolidating in the Chikukwa villages, strengthening social connections within those villages, striking outwards to other parts of the world and facilitating permaculture as an international movement.

The UK Permaculture Association

My account draws on my interview with Andy Goldring, the chief executive officer for the last 20 years. The structure of the UK Permaculture Association (PA) reflects the legal requirements for charitable company status. This organisation is the closest thing in permaculture to founder of

sociology Weber's definition of 'bureaucracy'.[11] The work is done by paid staff appointed by merit. There is a 'monocratic hierarchy' – a body at the top organises the work of subordinates.[12] Here, the board of trustees has legal and financial oversight. The board delegates to the CEO who in turn delegates to staff. There are 25 appointed staff. Eight full-time jobs, paying £25,000 per job, spread between 25 people. Up to this point, we can see analogies between this organisation and a 'bureaucracy' as Weber defines it. Beyond this, there are various departures from his definition. Working groups are constituted by paid staff from the organisation working alongside volunteers. There are usually up to 150 volunteers at any one time. The board is elected annually by the entire membership and any member can stand for election. So, trustees represent the membership – 1,450 members who have paid subscription fees. The organisation is only credible to its volunteers and to membership if it successfully represents the permaculture movement. These democratic aspects of the organisation indicate that the PA is only a partial fit for Weber's definition of bureaucracy.

Andy explained the three kinds of work that they do. The categories relate to their legal status as a charitable company. The first is referred to as 'charitable trading'.

> We deliver charitable trading. So that's where we're selling stuff basically. Selling stuff which furthers our purpose of educational research. So, our membership is a sale, events are sales, our diplomas in applied permaculture design are sales, educating membership is a sale, and things like books. So, all those sales are around fur-

> thering our mission. Members join and we help them learn about permaculture and connect with each other. So, some of our money comes from selling stuff. About £90,000 a year.

As Andy depicts this, he suggests an analogy between the typical capitalist firm and the PA. While there is an analogy, in that the 'firm' markets products for sale, there are also differences. The aim is not to make a profit to pay shareholders, but to advance the mission of permaculture.

The second kind of work is funded by grants. The PA applies for grants and contracts for funded projects. The association employs permaculture businesses to implement the work. They are furthering the aims of permaculture and funding members to pursue 'right livelihood'. These operations are alternative to mainstream market operations. The funders are not looking to make a profit by selling the products the PA contracts to supply.

A third kind of work is hosting members' projects. 'So,' said Andy, 'there's a brilliant food growing cooperative in London which does a lot of work with vulnerable people. Because they're a cooperative they can't get charitable funds, so we work together, we take the money, pass it on to them, we take a small fee and everyone's happy.' All in all, the organisation is running on a budget between £200,000 and 500,000 per year. This figure massively understates the economic significance of their operation. Most of the work done by the organisation and its members is voluntary work – it does not appear on any budget.

Andy describes his entry into the organisation 20 years before. There were five distinct filing systems. This office

chaos represented an organisation propelled by rushes of enthusiasm as voluntary organisers worked for several years before burning out. The organisation was wracked by tensions and had few resources. He decided what was necessary was a continuous professionally staffed organisation. At the time, he was working a 50-hour week and not earning enough to put a deposit on a house. He had to do supplementary work stacking shelves. He applied for an increase.

> And one of the trustees said, 'I can't believe we're even paying you. This is a mission we're on, really it's a privilege to be doing this work'. And I said, 'That's fine, I'll just go and get another job that will let me get this house because I've actually got two kids'. So, we had that argument then. If you want people to put in significant amounts of dedicated time, you have to make it possible for people to do that. No-one in the Permaculture Association is getting rich. The vast majority of people need some sort of income to operate in the current world.

This was a significant turning point for UK permaculture, a moment of 'institutionalisation' – a transition common to many social movement organisations which move from 'loose structures to professionalized, hierarchical organisations'.[13] One part of the movement network has become embedded in the mainstream – becoming 'institutionalised'. For any social movement, the danger is that the original movement's goals can become displaced by the needs of the organisation to maintain itself.[14] An associated danger is that those who lead the organisation become

unaccountable – a process referred to in political theory as 'Michels' iron law of oligarchy'.[15] Some features of the UK association make this unlikely. The wages of staff are low by comparison with jobs in the mainstream – reducing the attraction for people motivated by money. A second factor is that the organisation depends on voluntary work and has to deliver outcomes that meet the expectations of these volunteers and the membership at large. So, the organisation is to an extent hierarchical and bureaucratic as far as paid staff are concerned. They are ultimately answerable to the board and to the CEO. However, in relation to the movement, the organisation depends on active consent and voluntary participation.

Andy's introduction to permaculture illustrates typical features of social movements. His background and values created an opportunity for recruitment.

> So, between 14 and 21, I'd pretty much defined myself by what I didn't want to do. The corporate world, the destruction of the environment etc. The exploitation of people. So, I'd found my 'no', but I hadn't found my 'yes'. I was just in a good open space looking for my next step.

He went up to London for a film and met an acquaintance at a phone box. They went for a coffee. His friend had just been to the international permaculture convergence in Denmark. Andy asked him to explain permaculture.

> It felt a bit like when you get a present at Xmas as a kid, and you're taking the paper off and you haven't actually seen what's inside yet, but you've got this real sense that it's just what you want. So, I went to Waterstones and

> they looked in their database and they had the *Designers' Manual*. It came in about two weeks later. Then just devoured it basically, cover to cover, made notes. So, everyone knew, oh, Andy's into this thing called permaculture. So about six months afterwards, someone said, 'There's an ad here for a permaculture designer course. You should apply.' So, I applied, and it was funded by some city regeneration project. A very large number of the teachers that were part of the network came and did a bit. A three-month course. So, I met loads of different people and went on my first permaculture convergence and met more people.

Following this he volunteered for positions in UK permaculture and was head of the association by 1999. Andy was a participant in a subculture of leftist environmentalism before encountering permaculture. Permaculture was known to some of his friendship network. It fitted exactly with the issues he was already concerned about. He became a participant through three key acts. One was reading a central text of permaculture. Another was receiving instruction from qualified teachers and meeting leading people in the network. Finally, he attended a convergence and volunteered, thereby joining the movement. We can see in this example the way that the peak body, the public face of permaculture, rests on a subcultural network of connections that together make it possible.

The Center for Bioregional Living

Andrew Faust is a permaculture teacher living in New York State. He received his training from Peter Bane, a US

permaculture teacher who published the US permaculture magazine, *Permaculture Activist* from 1990. Andrew's training was undertaken at 'The Farm', a communally owned property that has been functioning since the countercultural 'back to the land' movement. 'The Farm' is well known for its links to the permaculture movement and to home birthing midwifery.

Andrew's first permaculture teaching experience was in Vermont, where he taught for 14 years. In the last ten years he has been teaching at 'The Brooklyn Commons' in New York. The building is owned by Melissa Ennen, a facilitating philanthropist. Some income from the courses goes to her, depending on enrolments. He teaches a PDC there twice a year and has graduated 600 people. They take the course on weekends and cover the 72 hours in two and a half months. Each student does a design project as the final assignment. Andrew finds that format very suitable for New York. Students intending to apply these ideas on a farm can design a rural property, while others may try an urban permaculture design. He encourages students to consider *urban* permaculture – how to design a bioregional food system, the location and handling of toxic waste sites, bioregional industrial production.

I asked Andrew if he knew anything about how students use their PDC training with him. Some of his graduates run an animation studio and have also started a permaculture retreat centre and Community Supported Agriculture (CSA) farm. Some have small businesses related to organic farming – for example, herbal teas, natural beauty products. Some have bought a rural property and want to know about homesteading, natural building and

gardening. There are teachers who include permaculture in their teaching. Their schools may pay them to take his course. Some are professionals in the building industry, such as architects who want to get a better idea of ecological design.

To facilitate his teaching, Andrew has created a website and Facebook page. A set of short videos are available. For example, a video tour of his farm, a video on renewable energy, a proposal for New York City. These have a global reach, for example, he has a Ted Talk on bioregionalism. His website coordinates two local permaculture groups – one in Brooklyn, the other in Paltz. In turn, on the 'Permaculture Institute of North America' website he is recommended as a teacher and consultant.

He and his partner Adriana Magaña have a 14-acre holding in the country at Ellenville in New York State (the Bioregional Center) which is used as a demonstration site (their Ellenville campus) for their teaching. Students can stay there while they are undertaking a PDC. Food is grown on their farm for their household and to feed students attending the training courses. A small surplus is sold to restaurants. The aim is to create a polyculture perennial landscape that is synergistic with the local ecology.

Andrew is keen to interest like-minded permaculture people to work with him on setting up New York State as a largely self-sufficient bioregion. To that end he has worked with a long-term friend to set up a Lands Trust. This is an arrangement whereby the organisers channel donations to landowners who contract to use their land sustainably – for example, setting aside a permanent woodland, using

organics. A Lands Trust can buy properties, contracting their previous owner to run them.

Andrew earns income as a consultant for people setting up permaculture farms. Both design and installation. Working with ex-students, he builds straw bale solar passive homes.

He has links to the people who have employed him as a consultant, designer, builder and landscaper and to those who have worked with him on such projects. His teaching facilitates contacts for other projects:

> If you've been a teacher, some of the people who come to do your courses are ex-students and some of the people for whom I do consultations come and do a class. My graduates come and volunteer with me on projects … The classes have been awesome because they're a recruitment tool. I do generate work and find clients and have kept a crew of graduates building stuff for four years now.

So, leading out from Andrew and Adriana, a social network extends into the community, constituting a part of the international permaculture movement.

Purple Pear Farm

Mark Brown and Kate Beveridge run Purple Pear Farm on the outskirts of Maitland, a small town in eastern Australia. Mark and Kate are strongly involved in the voluntary community group that is located in nearby Newcastle, 'Permaculture Hunter Region'. This organi-

sation has been going since the mid-1990s, with about 30 people coming to a meeting every month. Members exchange ideas and arrange local talks. For example, a slide show presenting someone's garden, a plant brought along for discussion. Documentary nights are promoted to the public and can be attended by 200 people. For a time, Mark was the chair of this organisation. Mark and Kate believe that the movement is growing locally. For example, David Holmgren toured Australia to promote *RetroSuburbia* and Permaculture Hunter organised his talks. There were 250 people who attended in Newcastle, at the city library. A similar number attended the Lake Macquarie event, the adjacent municipality, and the same number at Cessnock, a nearby town. Mark and Kate have also been active members of Hunter Organic Growers. They are well known in the Newcastle permaculture movement and their farm is widely cited as an example of permaculture.

Mark originally worked as an edible landscape gardener. He undertook his PDC with Mollison in 1995. Kate developed her interest in permaculture after buying the property that is now Purple Pear. She attended workshops at an agricultural college and read key permaculture texts. At the time she was working as a primary school teacher. As Mark and Kate linked up and started their business, they trained in permaculture education, with Geoff Lawton. They also use Rosemary Morrow's teaching book.[16] They have a subscription to the Australian permaculture magazine, *PIP*. They do not attend convergences.

On their 14-acre farm, they apply biodynamics as well as permaculture. They eat eggs and also sell them. Their cows' milk goes to the kitchen. Vegetables for their CSA

business come from a set of mandala gardens, each about 2 metres across. When a garden bed is being rested, they bring chickens to it with a moveable hutch. The chickens weed, destroy pests and fertilise. Up to 30 households have been enrolled in the CSA at any one time. Households pay for 13 weeks and pick up their box from a local Steiner school or from Purple Pear. Water from a farm dam irrigates the vegetables. Compost is prepared from animal manure and farm vegetation. There are grape trellises and an orchard of fruit and nut trees. Other technologies of sustainability are composting toilets, solar power and grey water disposal in reedbeds. Contour bunds and swales trap water coming down the slope.

They have been assisted by young people learning about permaculture. Initially, they invited people from the WWOOFs movement (willing workers on organic farms). Replacing this more recently, they invite students to a PDC course for two weeks, to be followed by a ten-week internship. This is repeated twice a year, setting up the vegetable beds in spring and autumn.

Another example of community networking is the farm tours that they host at Purple Pear. For example, classes of high school and university students doing training in environmental science, sociology or agriculture. Kate hosts 'mums and bubs' tours. Twice a week, 13 mothers sign up to bring their children to the farm. The children are fascinated to see the farm animals. Kate talks to the mothers about the ethics of animal husbandry. They also host birthday parties.

As with Andrew, Mark and Kate run a promotional website. Invitations to courses and events are posted. A

short film shows the farm and its operation. Kate writes an occasional blog with photos.

A close examination illustrates the usefulness of the image of an assemblage. Kate and Mark are linked to a number of leaders of the permaculture movement. To their teachers, Bill Mollison and Geoff Lawton. To other key figures, David Holmgren and Rosemary Morrow, contacted through local permaculture events. Nick Rittar and Kristen Bradley, from 'Milkwood'. They met them when Nick and Kristen lived in a nearby town. Their work on the farm connects Mark and Kate with other permaculture associates. Their assistants, whether WWOOFers or interns. Their students past and present. Clients in the CSA scheme. People who have toured the farm. These contacts are face to face and also link organisations – for example, Purple Pear Farm and the Steiner School, Purple Pear Farm and the University of Newcastle. Finally, key organisations are two community groups linked to Purple Pear Farm – Permaculture Hunter Region and the Hunter Organic Growers society. These provide a peer group community connected by loose ties of friendship, cemented by common projects.

It is connections like these which build the social power of a movement.

> Collective identity is strongly associated with recognition and the creation of connectedness. It brings with it a sense of common purpose and shared commitment to a cause, which enables single activists and/or organisations to regard themselves as inextricably linked to

> other actors, not necessarily identical but surely compatible, in a broader collective mobilisation.[17]

Reflections on permaculture networking

These vignettes indicate the diversity of permaculture networking. Even the UK PA is dependent on networked smaller units, operating autonomously, linking up to the peak body and other permaculture nodes when the need arises. Geoffrey Pleyers conducted research on the Belgian alternative food network. The movement aims to grow by swarming and emulation, rather than by amalgamating into larger and larger coordinated institutions. 'We don't seek to build a big organization but many, many small organizations, each maintaining its specificities.'[18] This is the de facto reality of much of the permaculture network. At the same time, the PA is an example of a successful large organisation within the movement.

According to Deleuze and Guattari *rhizomatic* social formations are:

> a-centered systems, finite networks of automata in which communication runs from any neighbour to any other, the stems or channels do not pre-exist, and all individuals are interchangeable … such that the local operations are coordinated and the final, global result synchronised without a central agency.[19]

In the examples given above, we have seen how well this metaphor works for the organisational structures of the permaculture movement. Independent semi-autonomous

parts of the permaculture movement spring up and make connections with other similar parts, building actions and creating further connections. Erwin in an article on the anti-nuclear movement in Saskatchewan uses this concept to explain that movement.[20] A participant describes the movement as 'organic like a mushroom with a huge underground base and dropping spores all over the place' – a characterisation that also fits permaculture.[21]

AS A DISCOURSE

Michel Foucault's writings established the theoretical tendency usually referred to as poststructuralism.[22] A key concept is 'discourse'. A discourse is a way of thinking, speaking and acting.[23] Dorothy E. Smith is well known in sociology for pointing out that discourses can create a relationship between a set of 'texts' and the people who use those texts.[24] The term text is being used to refer to written books and articles – but also to films and other media. People can be linked to each other through their common use of a set of texts. These texts 'mediate' their social relationship. She also notes that people's use of the texts is not a mechanical imprinting. Instead, people creatively develop different responses to the same text in relation to their own situations and histories.

Permaculture is a discourse of this kind. Individuals who identify as 'permaculture' use the canonical texts to construct their engagement. These texts allow a variety of practices to be creatively invented by permaculture people. As social theory suggests, social movements operate on the terrain of ideas, creating alternatives to

the mainstream, unifying the social movement around these ideas: 'the fact of sharing a habit, an ideology or an ideal determines the being-together'.[25] So here, I am using the concept of discourse to understand something more about permaculture *as a social movement*.

For example, Kate and Mark have presented their farm as a model for sustainable vegetable production and sale to the community, as 'community supported agriculture'. This backdrop informs their farm tours and permaculture training. In an almost identical economic situation, Andrew and his partner Adriana treat their farm as a permaculture 'homestead', rather than a market enterprise. Exactly as with Kate and Mark, they also use it as a demonstration site for their teaching. Andrew has used this teaching to assist his building and landscaping enterprises. Both couples refer to canonical texts as inspiring their practices. The differences between their practices show permaculture creating a space for 'complex adaptive behaviour occurring through participative self-organisation from the bottom-up'.[26] The effect is to grow permaculture as a movement.

Participants in the movement constitute their permaculture identity in relation to the texts of permaculture. Kate and Mark talked about the influence of Holmgren's *Principles and Pathways* and Mollison's *Designers' Manual*:

> Kate: I was just reading here [in *PIP* magazine] about 'parenting the permaculture way' using all of David's principles. I love it because I am an early childhood teacher.

> Terry: So, when you talk about permaculture principles you are talking about David's principles, aren't you?
>
> Kate: Generally.
>
> Mark: Yes, but we also teach the 15 that come out of the Manual.

This led to a discussion of the ethic of limiting population included in the *Designers' Manual.* Kate argued that education of women was a key and Mark referred to the work of Rosemary Morrow in Cambodia. They cited her book *Earth User's Guide to Permaculture* (1993) as an excellent introduction to permaculture.[27] They had also found her teachers' manual useful in their own teaching.[28] They recommended that the *Designers' Manual* be read *after* people had taken the PDC, it was too dense for someone totally new to permaculture.

Andrew also talked about key canonical texts from Mollison and Holmgren.

> I find a lot of teachers … in the permaculture community who don't seem to say, for example, you should know Bill Mollison's material. And in particular I would say, the *Global Gardener* as a film series, it's a very powerful documentary series. The things that Bill says in those early series are still really important ideas.

He was equally enthusiastic about Holmgren's writing, saying this of *Principles and Pathways*.

> I'm really thankful for that book because as someone who works in the field as an educator, I see it as one of

> the first books in decades to be written by one of the founders of permaculture and to finally update it ... I think that book's solid. I like all of Holmgren's material, I really appreciate what he generates. Crash on demand, post future scenarios.

Statements like this were made by all the permaculturists I spoke to. Even the few who had not taken a PDC cited canonical texts they had read. A surprise was the consistency with which Rosemary Morrow's books were mentioned. A substantial majority cited Morrow's *Earth User's Guide* or her *Teaching Permaculture* as books they had read and used. For example, Natalie Keene, working in Norway, was asked what other books in permaculture, beyond the canon, had been helpful: 'Rowe [Rosemary] Morrow's *Teaching Permaculture*. *Earth User's Guide* would come second. I know she wrote it before, but for me, teaching permaculture in an international context came straight after my PDC.' Morrow's two books construct permaculture as designing for agricultural sites, with a subsidiary emphasis on residential design. If permaculture is a discourse related to a set of canonical texts, Morrow's works are two of the five key texts.

There has been some concern with quality control of permaculture training. It has been legitimate to teach the PDC with two years of permaculture practice following your own certificate. Permaculture organisations have certified some teachers by vetting their PDC curriculum. For example, the UK Permaculture Association. But this practice is patchy and does not apply in developing countries. The PDC instead works through a system

of authorisation by 'provenance', similar to that used to validate antiques. Despite this, permaculture as a discourse related to key texts has been remarkably coherent. Permaculture practitioners of the widest variety and backgrounds cite ideas as 'permaculture' that can indeed be found in the canonical books. Examples could be taken from any of my interviews, but I will give two from developing countries. The Matsekete parents from the CELUCT project in Zimbabwe were interviewed in 2010 to talk about their household farm.[29] Golay Matsekete explains their use of manure:

> We use manure. We were taught to interrelate the field and our animals that we keep here. So, we take manure from the kraal there we put it into the field. And the residues from the fields to the animal. So, they are helping each other. We are getting something from the animals and from the field.

Likewise, their use of water:

> This place we are doing water harvesting. When it rains, we have run off from the roof there and the water goes into the garden there. And it irrigates the bananas there and some of the crops that are in the garden. And at the back there, there is a bathroom. And the run-away from the bathroom it goes to the bananas again. And over there we have got a swale there, which catches water from the roads there. A part of it comes to this garden here and the other one goes right over there where you have seen some bananas over there. So, throughout the

> year, each drop that comes this way is used. Because we are now using this principle of water harvesting it's now green. It is not as dry as the other places where the water runs through and it erodes the soil. Our tillage here is not as hard as it used to be, because the soil is always wet.

These ideas inform their household agriculture and can be found in Mollison's *Designers' Manual*, for example, the idea that different elements of the farmed space will have multiple functions and assist each other, the use of swales to trap water coming down a slope.

The more abstract ideas from the canonical texts are also referenced by participants in the movement. Sayu is one of the staff at the IDEP project in Indonesia. She explains the idea that people cannot be dependent on the market economy. They need to join with others to achieve sufficiency, selling a surplus only after that. This reasoning follows passages from the *Designers' Manual*. She goes on to indicate the necessity to join different parts of the community together. While permaculture can interpret self-sufficiency as individual family sufficiency, Indonesians will achieve self-sufficiency through cooperation. She references ethical principles drawn from Mollison's writings.

While there may be some grounds for concern about permaculture teaching and certification, what is remarkable is the *coherence* of a movement based on a networked provenance-based system of certification.

CHARISMATIC LEADERSHIP – PERMACULTURE AS A CULT?

Permaculture has been humorously compared to a cult. It is probably more useful to think of it as a social movement with some cult-like features. How do cults differ from social movements? Cults, as sociologists define them, have a centralised organisation, rigid rules for membership and a top-down power hierarchy. This does not imply that a cult is bureaucratic, the power structure may be quite loose and personalised. A cult attempts social closure, members constitute their social relationships with other cult members. By contrast, a social movement is 'polycephalous' – many headed. A social movement is constituted by a network of semi-autonomous units. As established in the previous section, a social movement may *include* hierarchical and bureaucratic organisations. However, its overall structure *as a movement* is polycephalous and networked. People involved in a movement are participants, rather than members – there are no clear procedures that include participants and exclude non-participants. Social movements are not closed off from the outside world, participants continue to interact socially with people outside the movement. While a social movement is held together by shared beliefs, these beliefs are interpreted differently by different participants.[30] By looking at some of the ways in which permaculture *resembles* a cult, we can also show how it is not *in fact* a cult.

Weber, a founder of sociology, writes about three kinds of authority.[31] *Traditional* authority is justified by vintage alone. Authority in the permaculture movement

is clearly not based on tradition. *Rational legal* authority is justified by reason and explicit formal procedures. There is no central body with a transparent set of principles of operation that are rationally applied to make decisions for the permaculture *movement*. Within permaculture, there are certainly some *organisations* that operate like that – for example, the UK Permaculture Association. However, the authority of these organisations only extends to their employed staff, not to the movement as a whole.

Weber's third kind of authority is *charismatic* authority – 'tied to an individual personality who is considered extraordinary … charisma creates a gulf between the charismatic leader and all others'.[32] There is no doubt that authority in the permaculture movement is at least partly charismatic. This is one of the features of permaculture that makes it similar to a cult. Cults are typically organised around the charismatic authority of their founders. In a cult, these charismatic founders organise and legitimate the top-down organisational structure of the cult and the social closure that goes with a cult. In a social movement, the charisma of the founders does not authorise a top-down centralised organisation. Instead, charismatic leadership in social movements rests on the 'leaders' ability to use ideological resources and to embody the movement as a whole, contributing to the creation of its collective identity'.[33]

The writings of Mollison and Holmgren are foundational. For participants, these writings define and explain what constitutes 'permaculture'. It is hard to imagine that any *other* author, now or in the future, could write a 'canonical' work in permaculture. Even books which

are widely influential in the movement, for example, Rosemary Morrow's *Earth Users' Guide to Permaculture*, are seen as commentaries, rather than as a part of the permaculture canon in their own right.

Mollison and Holmgren are foundational figures in another way. Their teaching, referencing the canonical texts, founds the credibility of the system of certification through the PDC. This system of accreditation is a second way in which permaculture resembles a cult. It could be said that while many may be 'participants' in permaculture as a social movement, the only true 'members' of the movement are those with a PDC. The teaching of the PDC informs the permaculture movement and possession of the PDC confers incontrovertible 'membership'. For example, at convergences, some of the proceedings are open to the public whereas other parts are reserved for those holding PDCs. As April, one of my interviewees, pointed out, the PDC operates like the system of 'provenance' which guarantees the authenticity of antiques. Each holder of a PDC is provided with a certificate that gives the date, the place and the name of the instructor. In turn, the instructor will have a PDC with the name of their instructor. This chain ultimately extends back to PDCs conferred by Mollison or Holmgren. While the authorisation of PDCs is decentralised in current practice, provenance centralises this authority in an increasingly mythical past. Systems such as this are common for kinship relations in stateless societies. Social units trace back their heritage to a known ancestor – perceived as descended from a remote fictive ancestor, not necessarily human.

The PDC can be seen as an 'initiation' into permaculture, a 'rite of passage' that constitutes identity. As Della Porta and Diani explain, rituals in social movements are 'procedures which are more or less codified, through which a vision of the world is communicated, a basic historical experience is reproduced ... They contribute to the reinforcement of identity and of collective feelings of belonging.'[34] This ritual is not organised from any central point, there is no pope of permaculture. This ritual is a rite of passage, or a form of initiation into permaculture.

So, with these cult-like features, why am I insisting on permaculture as a social movement rather than a cult? What marks permaculture definitively as a social movement is the fact that there is no centralised organisational structure based around the charismatic authority of the founders. As a social movement, permaculture is constituted by a network of semi-autonomous parts. To use the jargon, it is 'polycephalous'. The charismatic authority of the founders is the power to *influence* rather than the power to *command*. In *Society Against the State*, the anthropologist Pierre Clastres considers the stateless societies of South America.[35] A war chief could try to persuade his fellow tribesmen to accompany him to war, but he had no power to command them to do so. The hereditary chief of a tribe was expected to mediate disputes and to urge parties to come to an agreement. He had no power to command and enforce any particular outcome.

A conflict took place in the early 'noughties' in Australia. The way that these events played out exemplifies the polycephalous structure of the permaculture movement. The following account is partly based on my own recol-

lections. I was involved marginally and talked to some of the people involved. It also fits with the mention of these events given by Holmgren[36] and the longer account given by April, an interviewee for this book.

Initially, Mollison had envisaged that those who had been conferred with a PDC would be considered eligible to teach. By the late 1990s, he became concerned that some of those teaching the PDC were introducing elements he could not endorse. In particular, what he referred to as 'woo-woo' – unscientific ideas, such as ecofeminist spirituality, ley lines and dowsing. Along with his partner, Lisa, and his former student, Geoff Lawton, he set up the 'Permaculture Institute', a development envisaged in the *Designers' Manual.* At this time, he was supplying a printed certificate to teachers who were offering the PDC, stamped with his logo. He decided to vet all teachers. Those who proposed to offer courses and to use his certificate were to submit their curriculum. Quite a number of leaders of the permaculture movement (almost all women) were not on his approved list. Nonetheless, these teachers continued to offer their courses and certify students with the PDC, without using Mollison's logo. The excluded constituted a majority of the movement leaders and they continued to coordinate permaculture in Australia, organising convergences and inviting Mollison to present keynote addresses. They treated the Permaculture Institute as one of a number of authoritative permaculture institutions in Australia, rather than as a peak body.

A group of these permaculture teachers allied with some who *were* on Mollison's list to set up 'accredited permaculture training' (APT) in Australia, a government

certified system of training for permaculture – regularising and bureaucratising *some* permaculture training. At the same time, the PDC continued to be the most popular form of permaculture accreditation, despite the absence of bureaucratically enforced oversight over the content of courses. Instead, the name and reputation of the teacher and the price of the tuition were key factors for prospective students.

A second initiative of this group was to close down the magazine *Permaculture International*. This had been failing financially. The group changed the name of the supporting organisation to Permaculture Australia and established that as an organisation aiming to become the Australian peak body.

April's description of these events fits with the sociological analysis of social movements. She explains why Mollison tried to control the accreditation system of permaculture:

> I got a bit of a heavy-handed treatment from Bill Mollison. At one point. I had to draw a matrix of how my course notes fly with his text. So, I got the certificate. I became teacher number two. I don't know who teacher number one is, I guess Geoff Lawton. Through the Institute that Bill took control of. He said there were too many people teaching permaculture. And they were getting into that fourth ethic, lots of spiritual stuff. He wanted to make it more scientific and he wanted to control who was teaching it.

Mollison contacted her to ensure that her teaching fitted with his requirements. If not, he would not allow her to use his logo and his printed certificates. 'And so, he wrote to me. He said if you want my certificates you've got to prove to me that you're teaching what I actually say. I had to show that I was teaching everything that he's got in that book.' She explains the way this edict operated and goes on to consider why Mollison's attempt to control certification failed:

> There was a list of people accredited with Bill to teach Permaculture Design Certificates. It is quite a short list. He was getting older and feeling that he'd lost control. The truth is that he'd given away the control in the early years as a social movement and that's the only reason why I felt that it was so successful. It was because it was a social movement that was self-regulated. It managed to be interpreted in different ways. So, after 25 years, you can't rein that back in.

Holmgren played a significant role. He quietly gave support to those that Mollison had attempted to exclude, spoke at the national convergences that they organised, and attended meetings to set up APT. He urged people to remember what they had in common and he avoided public controversy. Quite a few leaders of the movement in Australia worked with both sides, helping to establish APT for government accredited training and Permaculture Australia as a peak body.

These events display permaculture as a rhizomic network linking disparate units, rather than a bureau-

cratic coordinated organisation – or a cult run by charismatic leaders. Mollison was not able to translate his charisma into the power to excommunicate people from the movement. This dispute had no impact on the global permaculture movement. Even in Australia, these events are rarely mentioned. Newcomers see permaculture as a harmonious and successful movement.

PEAK BODIES VERSUS CHARISMATIC LEADERSHIP

As Buechler maintains, a moment of crisis for social organisations based on charismatic authority is the death of the charismatic leader. No one can really fill their shoes. The social movement loses power and influence if it tries to turn itself into a bureaucratic rational legal organisation.[37] The bureaucracy tries to perpetuate itself and the innovative invention characteristic of a social movement wanes. A similar change can mark the process by which a cult becomes a religion. We could reasonably look for a transition of this kind in permaculture by examining the role of national peak bodies that might speak for permaculture, following Mollison's death in 2016.

In the USA, several organisations suggest they may have authority as a peak body. The organisation having the most credible claim is the 'Permaculture Institute of North America' (PINA) – 'a professional organisation of regional hubs working collaboratively across North America and Hawai'i'.[38] They are organising a leadership summit to develop steps to become 'continental leaders of Turtle Island'. The site provides a list of approved

courses and a list of people who have received professional diplomas from PINA. Members of the board are represented by a short biography. Some board members see PINA as functioning to enforce 'uniform standards and vetting', something which is unfortunately necessary given that 'unethical practices have occurred under the guise of permaculture'.[39] The aim is to have the board of directors nominated by the regional hubs. In turn, the regional hubs will be constituted by their memberships. It is worth noting that this is still a work in progress. While some aspects of a peak body have been achieved, others are not yet finalised.

A second organisation also claims status as a peak body. The 'Permaculture Institute' site explains the founding of the Institute as a body intended to 'cover' the Americas given that by the mid-1990s 'Mollison's Permaculture Institute of Australia was no longer able to keep up with demand for information and courses'. Apparently, Bill Mollison and Scott Pittman conferred over establishing this other institute in Santa Fe to service 'the Western Hemisphere'.[40] Testimonials from students speak of the teachers as Scott Pittman and Jason Gerhardt. Effectively, the Institute is their business website, rather than the site of a peak body.

There is yet another organisation, with headquarters in Australia, that perhaps suggests itself as a peak body on a *global* scale. The 'Permaculture Research Institute' (PRI) is located in Australia, but courses are also run in the USA and the PRI presents itself as a worldwide body. Their site says first that the PRI 'is located on a Permaculture demonstration site in The Channon, NSW, and is headed

by Geoff & Nadia Lawton. We specialize in education & training worldwide.'[41] That characterisation presents their site as a typical permaculture business run by a couple. The accompanying text suggests that they are in fact *The Permaculture Institute*, established with global intentions by Mollison himself.

> Permaculture founder Bill Mollison established the first Permaculture Institute in 1979 to teach the practical applications of Permaculture design … Upon his retirement in October 1997, Bill asked Geoff to establish and direct a new institute on [his] property. Geoff agreed and continued developing the Farm over a three-year period. During this time, Geoff established the Permaculture Research Institute we all know and love today.

This claim is backed up by a section of the website that posts permaculture projects from around the world. Actually, there are a number of permaculture teachers in Australia who also teach in other countries without being part of the PRI. For example, Rosemary Morrow, Robyn Francis, Russ Grayson, Fiona Campbell, John Champagne, Robin Clayfield, Morag Gamble, Rick and Naomi Coleman. This list is far from comprehensive.

In the UK there is only one body which presents itself as a peak organisation – the Permaculture Association, described in detail earlier in this chapter. They have established an accreditation system for teachers of the PDC in the UK. As Alice says, the requirements are flexible, and the paperwork is not too onerous. The Australian peak body, Permaculture Australia, is similar to the UK body.[42]

The board of directors is elected by the membership. There are three part-time paid staff. The site promotes community permaculture groups and permaculture businesses. The organisation does not accredit teachers of the PDC. Permaculture Australia also administers the nationally accredited permaculture training system (APT) – taught in technical colleges in Australia.

The peak organisations of permaculture are very far from a bureaucracy that speaks for permaculture. They coordinate the people *who want to be part of* a national organisation. Attempts to control accreditation in permaculture fall short. Some teachers do not apply for accreditation, claiming authority based on student testimonials and their 'provenance'. A peak body has no legal authority to prevent anyone from representing themselves as 'permaculture'. When peak bodies do accredit teachers, they have to be flexible to avoid mass defections. Not all peak bodies even attempt it. A number of national organisations in the same country can *portray* themselves as peak bodies. Peak bodies are absent in most developing countries.

LEVELS OF INVOLVEMENT WITH ORGANISED PERMACULTURE

There is a variety of levels of involvement in permaculture organisations. The permeable and shifting boundary between permaculture and the rest of society marks it as a social movement and not a cult. In a social movement, there can be a sense of being 'involved in a collective endeavor – without having automatically to

belong to a specific organization'.[43] Some interviewees are active in local voluntary groups but not beyond that. For example, Lachlan with a thriving permaculture business in Newcastle, Australia, has been very active in the 'Permaculture Hunter Region' association but never attends convergences. Others are affiliated online but face to face connections are locally based. Mark and Kate do not regularly attend permaculture convergences, but Purple Pear is listed as a permaculture business on the Permaculture Australia website. Other permaculture people are active at all levels of the organisation, locally, online and through national and international convergences. For example, April is one of those interviewees who regularly attends permaculture convergences. All my interviewees have had connections to other movement participants – for example, friendships, acquaintances, teachers, students.

These varying levels of involvement speak of different life options. In some cases, there is a more active rejection. Natalie in Norway runs two CSA farms and a permaculture gardening club. Trained in agroecology, she is wary of those permaculture people who perpetuate 'folk myths'. She avoids the national organisation. Loretta was an enthusiastic participant in the 2013 Cuba convergence. Following that, the North American cohort from the convergence initiated meetings to set up a national organisation. Loretta felt that some participants used the meetings to promote their own importance and she dropped out. Dave describes the UK leaders as 'a bit of a mafia'. At the outer level of engagement, permaculture participants may have taken an introductory course or

read key works. Their activism could be their own garden. In anglophone countries, participants in the environmentalist subculture are generally aware of permaculture and sympathetic. For example, Naima in this set of interviews, has undertaken some introductory courses. She has purchased a property that used to be a permaculture farm. She is critical of certain aspects of permaculture but has friends who connect more closely.

These partial involvements may suggest disunity. However, they also illustrate the way a networked egalitarian assemblage works. There are connections between elements without any necessity to organise everyone into a comprehensive unified order – 'the emergent properties of acting in a decentralised, participatory, and highly democratic manner [afford] a strength, durability, and interconnectivity that would otherwise be absent'.[44]

PERMACULTURE AS A SOCIAL MOVEMENT

So, permaculture operates as a movement, rather than as a cult. While it includes organisations, it is not itself an organisation with clearly defined membership and rules coordinating the activity of all members. Participation is strategic and not necessarily permanent. There is a constant production of new organisations, while older commitments lapse. In this, permaculture has a lot in common with other social movements. Jeffrey Juris and Geoffrey Pleyers consider the global justice movement. 'Alter-activists prefer temporary, ad hoc coalitions, and are more committed to the movement and its values than any particular organisation.'[45] Melucci sees social movements

as based in subcultural networks – 'the visible action of contemporary movements depends upon their production of new cultural codes within submerged networks'.[46] For example, people who have a business nominated as 'permaculture' are a small number of the people they know who have been trained or are sympathetic.

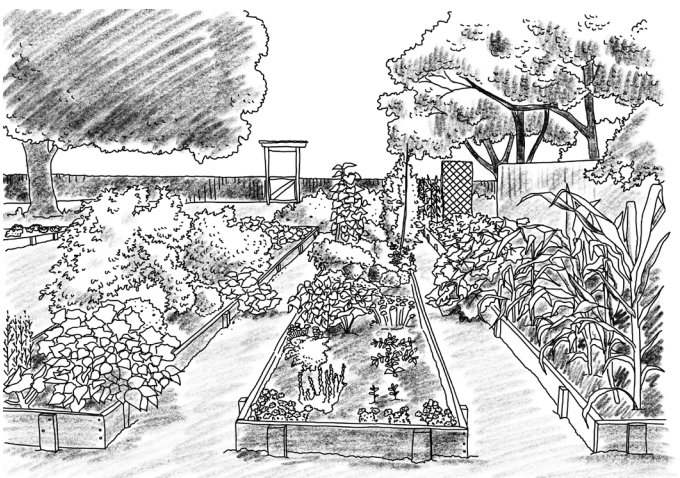
Della Porta and Diani summarise these characteristics of the structure of a social movement:

> (1) segmented, with numerous different groups or cells in continual rise and decline;
> (2) polycephalous, having many leaders each commanding only a limited following; and
> (3) reticular, with multiple links between autonomous cells forming an indistinctly bounded network.[47]

The second of these points does not entirely fit permaculture. While permaculture has a multitude of local leaders, so it is polycephalous, the two founders of the movement have a special status. Yet these founders have never been heads with *authoritative control* of the movement. Mollison could not exert authoritative control when he was alive, and he has not been 'succeeded' by anyone taking over where he left off. No peak national body or international body *controls* permaculture. Accordingly, while permaculture may have some cult-like features, it makes more sense to see it as a 'social movement'.

CHAPTER THREE

Strategies and Visions



What distinctive strategy does permaculture take – as a movement aiming to create a 'post-industrial' society? What permaculture shares with leftist thinking is the idea that we need to move to a different 'system'. First, this chapter looks at strategies for change recommended by permaculturists. Do permaculture activists endorse the grassroots anti-political strategy of the canonical texts? Second, I consider what kind of society and technology permaculture participants envisage. If society changed in all the ways that permaculture recommends, what would it look like?

AS A GRASSROOTS PRACTICE, AS ANTI-POLITICAL

Co-founder Bill Mollison established permaculture explicitly in opposition to overtly 'political' practice. The influential series *Global Gardener* (1991) shows Bill walking across a misty paddock as we hear him recall:

> In the late sixties, I was protesting social and environmental issues. But by the early seventies I decided that protest was not good enough. So, I commenced designing gardens and positive design systems for human settlements.

The next shot has him talking from his veranda, looking out at his garden in the subtropics:

> If people only realized that everything they needed is right outside their door. All you really need is sun, plants and keep your eye on the soil. And of course, if you've got plenty of fruit, you've got a lot of friends.[1]

In these statements in *Global Gardener*, we might well accuse Mollison of a breath-taking absence of reflection on what it is to live without the financial capacity to purchase your own land. In practice, permaculture activists have devised a variety of grassroots strategies to *influence* the use of land without requiring them to *buy* a farm.

The strategy suggested in these opening sequences from *Global Gardener* is explained at length in the *Designers' Manual*. Not intending to repudiate the *goals* of the envi-

ronmentalist and leftist movements, Mollison criticises the strategy of working towards the reform of the state. What makes more sense is to start to establish self-sufficiency through sustainable agricultural systems.[2] These are tactics sometimes linked to anarchist politics. 'Small-scale experiments in the construction of alternative modes of social, political and economic organization' enable us to avoid the dual pitfalls of 'waiting forever for the Revolution to come' or 'perpetuating existing structures through reformist demands'.[3]

When academics in the social sciences write about social movements, they have a tendency to weigh them up in relation to their impact on state policy. For example, Alberto Melucci distinguishes 'active' and 'latent' phases of social movements. Movements are active when they contest political power structures. They are latent when they are creating the subcultures that *enable* the activist moments, subcultures which express their political ideas in daily life.[4] For permaculture this distinction is hard to draw. Permaculture certainly sees itself as challenging 'industrialism' and the growth economy. However, permaculture considers the most effective strategy to be replacement rather than contestation. This is to take place through (1) right livelihood, producing within the framework of permaculture ethics and (2) right consumerism (my term), consuming the products of businesses that follow a permaculture ethics, reducing resource use through lifestyle choices, spending surplus income in worthwhile community projects. The strategy is to exploit the 'affordances' of the capitalist economy. The freedom of choice in consumption, the freedom to choose employ-

ment and set up a small business, the spending surplus of the middle class, the potential of the not-for-profit sector. This is the strategy of the 'smith' – 'to innovate by tracking and exploiting opportunities in and around existing structures'.[5]

There is a structural basis for this strategy. Thomas Piketty argues that extreme concentration of income and wealth in the hands of the very rich is characteristic of capitalism up until the Second World War.[6] After that, strong national regulation in the rich countries taxed the wealthy elite and supported the increased earnings of the working class. This political control also established a strong middle class. With globalisation, these processes have been gradually reversed. For example, in the USA the income of the top 10 per cent was about 43 per cent of the total national income between 1910 and 1940. Between 1945 and 1980 it dropped back to 33 per cent. Between 1980 and 2010 it climbed to 50 per cent, with most of this increase being in the top 1 per cent.[7] Despite these setbacks, the middle class of the rich countries that was first established in the postwar period *still exists*. Prior to the mid twentieth century the richest 10 per cent owned 90 per cent of *all wealth* and the top 1 per cent owned more than half. This changed after the Second World War. High taxes on the rich and strong growth favoured the middle class. In Europe today the middle 40 per cent own 35 per cent of the wealth and in the USA it is 28 per cent.[8] Neoliberal policies may have stalled the *growth* in the middle class, but the middle class of the rich countries still has significant wealth.

The de facto strategy of permaculture is to use the discretionary income of the middle class to drive a change towards a more sustainable society. The emphasis is not on charity but on empowering lifestyle changes. Securing some of one's food supply through self-sufficiency; driving sustainable agriculture through ethical purchasing; making a personal choice to reduce consumption and move away from fossil fuels; creating a small business in organic farming; assisting sustainable food production in developing countries.

Endorsements of the permaculture approach

Many of the permaculture activists I spoke to endorsed this anti-political grassroots strategy. They spoke about the way permaculture is a 'positive' strategic option in comparison to other approaches. Jasmine from the UK gave an extended explanation. Prior to taking her PDC with Robin Clayfield, she had completed a degree at Durham University, concentrating on environment and development.

> I went around for those four years telling everybody I knew about all the horrendous international agreements and I was terribly engorged with it, but this stuff had taken over me really and it was very much on that political science level of theory and actors. My pledge to myself when I got to Australia was to put that down and see how it was without all those theories taking over my brain.

While she was working in Australia at a call centre, she heard of Robin's course in permaculture and signed up for it:

> It showed me that I still really cared about all those issues, it just was better for my mental health to be engrossed in the solutions rather than in the critique. I think that the political approach led me to understand the complexity of factors, and the scale of crises. Whereas her permaculture course did not even look at anything to do with that. It was just straight in – solutions. There we were learning, mulching, having tea with kangaroos. I was just empowered and optimistic and I think that's one of the greatest gifts permaculture brings to things because it's based on a strong understanding that all that stuff's happening in the world, but they don't really put time into that. Let's model driving ecosystems and you apply those principles in your design and let's actually get stuff happening now, actually capturing and storing some energy.

Similar comments were made by Lachlan, working in Newcastle, Australia. Lachlan had experience working with World Wildlife Fund for Nature and he was bothered by their negative messages when they approached people on the street. 'The idea of making other people uncomfortable. It's not a good approach in my book. I want to be able to present things in a non-confrontational way. That doesn't get people's backs up.' As a student he was very much involved with environmental activism, blockading

the coal port of Newcastle. He chose a career in permaculture because it allows him to do good in the world.

> And it just made the most amount of sense and also for my mental health I felt like I could actually make a tangible difference, that I could actually see, like even in one backyard at a time. It keeps me somewhat positive in what can be quite a negative situation. I had a major issue with just feeling powerless beforehand.

Dave and Alice talked about the ways in which grassroots action was preferable to top-down solutions in developing countries. Dave had discovered the failings of Marxist revolutions in the third world and abandoned grand political projects for piecemeal permaculture solutions. Alice was a member of a friendship group who went to the Middle East to support the Palestinian cause. Their experience there led them to drop attempts at grand plans for top-down development work. They went on to establish a permaculture model farm and a permaculture information centre in a Bedouin village.

The developing country interviews show how permaculture can work towards social justice and sustainability without being confrontational, a strategy made possible through permaculture's anti-political standpoint. Using that, permaculture initiatives can avoid being wiped out by a dictatorial state apparatus. Petra, the founder of IDEP, explained the Asian Economic Crisis that devastated the Indonesian economy. At that time, the Suharto regime was nervous about anti-regime activism. She was one

of the few expatriates still living in Bali in 1997. Fearing violence, many had left.

> And there were a few of us diehards left, and we got together to talk about how in the world could we possibly be useful and one of the people had some experience working with Robyn Francis. And he explained what [permaculture] was and we thought, hmm, this could be a very neutral non-threatening way to get a bunch of really hardcore activists together. During the Suharto regime it was no joke to have a local NGO, you had to be very bold if you were dealing with any human rights issues or even environmental issues.

A similar analysis was offered by CELUCT leaders from Zimbabwe. The conflict between the Mugabe government and the opposition had become violent. The collapse of the economy forced many urban workers to return to their communities to grow food. Avoiding political conflict, CELUCT focused on food security and community harmony, later helping to set up a mediation organisation networked through the whole district of Chimanimani. Making this possible, CELUCT was vigilant in reassuring government and opposition that they were not a 'political' organisation.

Critiques of permaculture strategy

A number of interviewees wanted to go beyond the anti-political strategy associated with permaculture.

Andrew argued against the view that every household should become self-sufficient.

> I think a myth that you'll find in much of the permaculture material is that everybody needs to become their own permaculture gardener/farmer. And to me, that is delusional. People don't necessarily love this notion of doing physical things. I might like it – I don't have to pitch that as something that everybody needs to like for the world to be a better place. So, to me, an easier track to bring about the permaculture vision is that you sell people on buying things and supporting people who are doing things that they can see have integrity.

He explained why his approach implied the necessity for political action. 'We need to retrofit the infrastructure to be more regionally self-reliant. We want to see decentralisation, of energy and food systems, we want to see localisation of how it is people eat, and where their sustenance is coming from.' With this, all purchasing decisions would be environmental ones.

> Redesigning altogether how food is grown, how energy is produced so that people don't have to be thinking about these ecological values, who are consuming things. It is not even necessary; it takes up a lot of mental bandwidth. People use all kinds of technologies that if how they were fuelled, how they were powered, what the food entailed to be brought to the plate, was something different, people would buy it.

Permaculture designers should develop plans for regional self-sufficiency and become active in community forums to get them adopted. As a teacher, he aims:

> to inspire people to study with us to feel they have a grasp of this scaled up application. So, their ability to take what is in the course and do something with it isn't just about their individual life application, did they start a compost pile, did they have a worm bin? Very likely they did but in addition have they learned ideas that they can go to different community decision boards and advocate for city wide compost initiatives that can start to solve some of the trash issues?

Alice's departure from the anti-political strategy was oriented to policies connected to land ownership and the payment of agricultural workers. The concentration of land in the hands of a rich elite makes it difficult for people with permaculture values to buy land. Ordinary people have been robbed of their land, leaving them in a state of dependency. The inadequate payment of agricultural workers was an effect of the market dominance of the supermarket chains. Low food prices are premised on the underpayment of agricultural workers. Alice suggested a number of political measures. For example, subsidies to allow people to buy land, changes to the pricing of food. This approach is reflected in political organising by her collective.

> Living in Wales I support Plaid Cymru, the Wales nationalist party because they've got really good land politics.

> One of our co-op members works as a policy analyst for the Landworkers' Alliance. So, we are members of the Landworkers' Alliance. So that is a political affiliation. And I am strongly on board with that, like land workers should get a better deal, we're being structurally oppressed.

She envisages a political reform to enable community farms and local food production to become normalised.

> I think there needs to be land reform. It needs to be made a lot easier for people to do what we are doing, you know, and have a decent living out of it. There needs to be reform to transport, there needs to be reforms to energy, retrofitting. We need to be more outward looking. Organizing at a community level. I'm against the idea that permaculture is like loads of smallholders and their little kingdoms. I don't see the point in that really.

Natalie in Norway is more trenchant in pointing to deficiencies in permaculture, but her critique is quite similar. Radical change cannot be engineered simply through lifestyle change and self-sufficiency. Permaculture needs to reach out and work with allied political initiatives. As a forest activist in Tasmania, she found that:

> There were a lot of young people in Hobart and around Hobart that were practising permaculture on their own land doing alternative food systems in the city, starting cooperatives in Hobart, but not engaging in the Tazzie

> [Tasmanian] forest campaign, and that always confused me. Because I thought well, I'm like you guys, I garden and push actively in alternative food systems and purchase organic food from local farmers. I also am a frontline campaigner in Tazzie forests. And why aren't you guys?

As she explored this conundrum, she found that the permaculture activists were quite negative about the forest activists. They were committed to a personal strategy of reducing their own impacts and avoiding entanglement with unpleasant political issues. She proposes an alternative response she would have preferred.

> And I found that the campaigners had a bad reputation amongst the people doing permaculture stuff. Interacting with them it was like 'I switch off the news, I don't listen to the news. I don't want to be an activist. I don't have the energy. I'm doing my own thing, and this is as big as my world gets.' And that's important. They were doing it well too. No car, no disposable products, you know, all these things. But those two worlds felt really completely separate. I want them to meld. I want those people who have this fantastic homestead to adopt a frontline activist and give them a place away from the front line for a weekend, you know, eating really good food. I found in Australia too many permaculturists who said that they find front line activism too violent, too whatever and they're making their change local.

She is critical of permaculture's silence on racial issues. A key incident was a visit to Alice Springs by some Spanish anarchists.

> So, when I was in Alice Springs, I met some Spanish anarchists, and they'd come to the home of permaculture. They were bitterly disappointed with the lack of radical stuff happening in permaculture in Australia. They were like, you guys have a nice lifestyle. Your lifestyle is very sheltered, and you've made a very nice house and you've got heaps of good food and your kids all go to Steiner schools and you ride your bicycles but there are desperate Indigenous rights issues happening in your town, and you are buffered from that. They had concluded that there is no radical permaculture challenging structural social injustices in Australia.

Natalie believes that permaculture should listen more to non-white and Indigenous voices. In her experience, agroecology does this better. Nevertheless, not all permaculture is the same. She praises her PDC course with Milkwood for its approach. These three were not the only interviewees to make comments along these lines. A common thread was the necessity for permaculture to reach out to other movements for environmental reform and social justice.

Permaculture's anti-politics

My own view on these issues is mixed. We need to ditch the view that the path to environmental change is for

everyone to become their own gardener and farmer. It rests on a middle-class and rich world assumption that people can buy land to grow their own food. As well, not everyone wants to be a farmer. On the other hand, encouraging some people to move in this direction is a part of what we need to take control of the means of production of food – to run agriculture more democratically and more sustainably. Even *education* in the nuts and bolts of sustainable food production is a useful part of a change to global sustainability.

The permaculture movement should acknowledge the permaculture anti-political strategy as based, in most cases, on the discretionary income of the global middle class. That is both a strength and a limitation. The best way for permaculture to deal with the charge that it is just for the middle class is not to deny everything and point to a raft of anecdotal exceptions, but to *situate* this middle-class activism in its economic context.

Many interviews conducted for this book argue that permaculture needs to reach out and link up with other tendencies working towards a just and sustainable society. This view is becoming mainstream within permaculture. The current version of permaculture impedes this movement. Because permaculture treats itself as covering both social justice and sustainability, there can be a tendency to think that the rest of the world just needs to realise that *permaculture is the answer*. It would be more useful if permaculture was to see itself for what it is in practice – a part of the environmental movement that focuses on sustainable agriculture and passive solar

design. It would then be totally obvious that permaculture needs to ally itself with other social movements.

While this is the framework of *thinking* that permaculture needs, the anti-political strategy also *works* for many in the permaculture movement. A leftist politics that lectures people about what they should be doing for an adequate political response is ineffectual. Permaculture does not have to ensure that everyone is singing from the same hymn book. The people who are saying that the news scares them, that they are just working on their patch, that permaculture works for them because it emphasises positive solutions, are making an accurate analysis of what it takes for *them* to be involved in systemic change. This does not prevent other people in the permaculture movement from working with people who are actively confronting global capitalism, attempting policy reforms or taking over the means of production in direct action.

John Jordan, writing for a collection on degrowth, makes a comment that would resonate with many.

> Unfortunately, many in … cultures of ecological alternatives such as permaculture … seem to think that our culture will be able to magically transition from capitalism to 'something nicer, greener, etc.' without resistance.

What we need in fact is resistance, 'confronting and dismantling unjust structures of power to make way for other cultures to flourish'.[9] Enthusiastic accounts of the New Social Movements concentrate on confrontational groupings such as 'Occupy' and the 'Global Justice Movement' as well as environmentalist movements chal-

lenging nuclear power, the fossil fuel industry, the timber industry.[10] Yet, in fact none of the strategies for social change to a more sustainable and just social *system* have so far been effective. In the long run Jordan is probably right – we will have to face up to a confrontation with the capitalist class. Yet the issue is what to do *in the short run*. Without a crystal ball it is hard to see what may actually work best. The permaculture anti-political strategy is at least one of the tactics that makes sense.

If success is assessed in relation to 'direct action' – taking over a part of the means of production – permaculture can point to some significant achievements. Interviewees such as Andrew, Natalie, Alice, Jasmine, Lachlan, Mark and Kate, not to forget the villagers from the Chikukwa clan, have in fact *taken over and run* parts of the agricultural means of production in a new way. These victories on the ground are also celebrated in videos on YouTube that are widely available. The message is that there is an alternative to environmentally disastrous agriculture. As Buechler notes, 'if hegemony is an important form of [cultural] power, then the culturally oriented, anti-hegemonic politics of new movements is an important form of resistance'.[11] In short, making use of discretionary middle-class wealth has been a remarkably successful strategy, even if it is not the whole solution.

PERMACULTURE AND UTOPIAN VISIONS

One can have no doubt about the utopian vision of the canonical texts of permaculture.[12] Bill Mollison and David Holmgren envisage a change starting with the grassroots

that in the long run may influence governments. The most significant change is ethical and cultural. Permaculture ethics inform an economy made up of ethical businesses and non-monetary community provision. Large profit maximizing corporations have been replaced by smaller privately owned businesses and cooperatives. Much of the economy is non-monetary – household self-provision and gifting, community gardens and working bees. The monetary economy is supervised at the local and bioregional level by an informed and ethical public. Most settlement is rural. I will call this the *town and village market bioregionalism* vision.

In a recent edited collection on degrowth, the editors begin by contrasting two visions of a sustainable future.[13] In the *ecomodernist* vision, new technologies allow sustainable growth and affluence. Finite resources are reused or replaced by renewable alternatives. Digital technology necessitates cooperative and egalitarian organisation, effectively creating 'Postcapitalism'.[14] Ecomodernism shares much with the earlier *ecological modernisation* theory, popularly presented by Amory Lovins as 'natural capitalism'.[15] In that approach capitalism continues and firms reorient to sustainable production as new technology makes this possible.

In the second *degrowth* vision, none of this is possible. We have to curtail our use of resources, our use of energy and our affluence. A simpler lifestyle means more time being available for cultural pursuits. Participation at workplaces and in the community gives people control and a simpler life allows an unhurried pace. This degrowth

vision is shared by three views of how such a society might work economically and politically.

Radical reformism

'Radical reformism' is the dominant vision of systemic change in the environmental movement now. Ecological economists support this analysis as 'Steady State' theory, developed by Herman Daly in the mid-1970s.[16] More recently it has been taken up by people who do not all adopt the 'steady state' label. For example, Richard Heinberg, from the peak oil movement, Tim Jackson, a UK economist, Paul Gilding a former director for Greenpeace, Naomi Klein, a socialist. The basic idea is to use strong government regulation to ensure that resource use and waste disposal do not exceed planetary boundaries.[17] These measures regulate a market monetary economy.

Recent radical reformist writing argues that current production has already exceeded planetary boundaries, making degrowth urgently necessary. Radical reformists propose distributive measures to deal with the economic impact of degrowth. A typical set of suggestions can be drawn from *Degrowth in the Suburbs*, a book with a foreword by David Holmgren. Dropping GDP in favour of a genuine progress index, rolling back the privatisation of government services, reducing resource use through caps, tradable energy quotas, working hour reductions, public spending on renewables, pricing carbon, tighter government control of the money supply, a debt jubilee, rights to housing security, population policy, the Universal Basic

Income, a job guarantee, wealth taxes, aid for developing countries, government support for workers' cooperatives.[18]

Ecosocialism

Recent eco-socialist writing agrees that we have exceeded planetary boundaries and need degrowth. The 'means of production' should be taken out of the hands of the capitalist class. A democratically elected government should plan the economy to prevent environmental damage. While there is a place for some small business and for workers' cooperatives, important parts of the economy should be nationalised. While a private energy company may attempt to maximise profits by providing energy cheaply, a government department could be instructed to use sustainable technologies and produce only a set amount. Committees of workers would consult with government management to organise production.[19]

The gift economy and the commons

The gift economy, or economy of the 'commons' is a vision associated with some versions of anarchism. Collectives run the economy without money or the state. The resources of the world are to be shared in common. Those using particular tools, lands and buildings are assured of their rights to make use of these commons, so long as what they are doing is supported by the community. Voluntary collectives establish themselves to produce something necessary and useful. In their production they have a particular community of consumers in mind. These intended

consumers are consulted, and the two parties negotiate an agreement to supply and receive goods or services. Production can be for the direct use of the producers or it may be to provide for other communities. There is no money, local or national, in this system. There is no state coordinating all this economic activity. Instead, the producers decide how to ensure that decisions are being made to implement an egalitarian ethos and look after the environment. They are aided in this by meetings with the communities that they serve.[20]

GRAND VISIONS AND THE POSTMODERNIST CRITIQUE

Recent sociological writing on social movements suggests that new social movements resist utopian thinking. Participants believe that a blueprint can engender dogmatism. Instead, a democratic and participatory process will include players with different visions, who can agree on the next step. Political change is to be evaluated as process, rather than in relation to some grand vision. Melucci summarises this analysis:

> Participants within contemporary social movements act in the present tense. They are not driven by grandiose visions of the future; their organizations are not vehicles for the implementation of such visions. Rather, those who participate within the organizations of a movement view their participation as an end in itself.[21]

We can call this the 'postmodern' critique of the left.[22] Statements that fit with this perspective are certainly

present in the interviews but frequently they are linked to suggestions of future directions that are quite concrete.

INTERVIEW NARRATIVES

I will present the interviews in relation to *dominant* themes, noting *subsidiary* themes as they appear. I will start off with ecomodernism, move on to radical reformism, next to the village market vision, then to socialist and anarchist visions. Thinking of this as a graph of responses, the radical reformist vision is at the peak of the curve – the post-industrial viewpoint with the most supporters.

Ecomodernism and ecological modernisation

The interviewees from IDEP in Bali were closest to ecomodernism or an ecological modernisation vision, emphasising the egalitarian implications of digital transactions, stressing the adaptability of capitalism and celebrating the growth in ethical businesses. Despite this, their perspective departed from some versions of ecomodernism and ecological modernisation in this way. They were supporters of the necessity for degrowth to achieve environmental goals.

Petra, a founder of IDEP, began by saying that as long as people made the ethics of permaculture non-negotiable, the structures of social organisation did not matter. Digital technology could dismantle the corporate top-down model. 'I'm excited about technology and the potential technology has to establish communication and more socialist values.' She cited an app that allows

farmers and traders to negotiate prices in real time – being apprised of pricing at every step of the value chain. This will be 'game changing'. 'There's understanding across the board of how does this business work and who gets what. The key is transparency. Because once it's transparent it becomes self-regulating.' This system has been invented to help solve the problems of world poverty. The aim is to network poor farmers to 'share experiences and increase their wealth and wellbeing'.

Petra is optimistic about sustainable business options in Bali. Local businesses are growing organics for restaurants and farmers' markets. Local permaculture groups offer PDC training. Tourist resorts and holiday destinations have established permaculture gardens. While mainstream commercial agriculture in Indonesia uses a lot of toxic chemicals, this is an effect of government subsidies, which make chemicals cheaper than organic solutions. So, it is a *corruption* of market processes, engineered by a political elite. While all this suggests an endorsement of capitalism and the market, Petra was also quite trenchant in her criticism of global elites. 'There are a lot of good people in the world but at the moment the puppeteers are not the ones with everyone's best interest in mind.'

Doni, also from IDEP, is enthusiastic about permaculture as a business model. I asked him if he had any concerns about the market economy.

> I don't really actually, because capitalism grows to be resilient and always adopts new things. And is always able to see the potential of money. I see a lot of permaculture businesses grow in Bali, actually. And grow

> across Indonesia. Kulkul farm is a business but also an education centre. There are some businesses, like East Bali cashew or Sensatia beauty products, that use local ingredients. They grow their own plants organically and use local people to work with them.

Yet in fact the practice of IDEP often defies the logic of the market. If a village is losing its forest because of commercial logging, IDEP steps in to remind people of ancient spiritual traditions that celebrate the natural world. It consolidates *subsistence* agriculture – so that extreme need is not forcing people into unwanted commercial developments. It assists those entrepreneurial solutions that do not destroy the environment. Sayu linked these strategies to permaculture ethics.

> So, there is always the market and I believe that with the concept of permaculture it is actually not only me going forward but other people. We do not have to compete in finding markets, or in planting, or socially – which used to happen in the village when people argued about land share and about planting.

Rather than competing to secure market opportunities, IDEP recommends cooperation to raise the standard of living for the whole village. Those farming rice should cooperate with those producing other crops and share produce – a non-market solution. Household self-sufficiency is primary. Only when that has been assured does it make sense to look at market options.

> I make it clear to the families that the system that is most important is the system that enables them to consume, because they cannot always sell to the outside. So, if there's no money they can still survive, that is primary. Permaculture taught us how to be independent first, then how to invite other people around us to be independent of imported resources.

So, IDEP practice is often closer to the *village market* model than to *ecomodernism*, suggesting the complexity of permaculture identities.

Some other interviews showed traces of ecological modernism and ecological modernisation. April was optimistic about sustainable business. Businesses will become sustainable as they factor the environmental risks into their long-term planning. Andy referenced ecomodernism when he argued that 'anarchism is the politics of the internet age'. Open-source technology provides the tools for autonomous communities and facilitates egalitarian networking.

Radical reformism

The most popular approach in the interviews was 'radical reformism'. Radical reformism is about state regulation of the market economy to bring about sustainability. Yet permaculture founders have eschewed *political* action and do not expect much from the state. It may be that permaculture is moving away from this anti-politics as the environmental crisis deepens. Of the 17 interviews relevant to this chapter, seven were strongly tied to radical

reformism – and through this to reforms organised by the state – while some other interviews shared elements of this position. I will feature four.

Lachlan, with a permaculture landscape business, produces the radical reformist perspective without reference to any reading from this school of thought. Current economic models presuppose continuous growth. That cannot happen on a finite planet. To prevent environmental damage, the government should place a monetary value on resources. The carbon tax (in Australia) was a move in the right direction. We should maintain a monetary market economy but legislate a four-day week – so people can maintain their voluntary community work. We need government regulation to spread the paid work to all. The government should tax the rich to fund development in poor countries. Public money should go into clean energy and reafforestation. GDP is a flawed measure of economic health. A better measure would show how the economy is catering for people's needs and looking after the environment. All these proposals are typical of radical reformist thinking.

When asked about the economic structure for a sustainable society *Andy* cites *Doughnut Economics* (2017) by Kate Raworth.[23]

> If you look at a doughnut, the outer ring is like our ecological ceiling – a boundary we can't go over. If that's our ceiling, then the inner ring of the doughnut is our foundation needs as human beings – the sustainable development goals. No-one living in absolute poverty,

people have access to fresh water, people have access to a fair democracy.

We have a degree of flexibility, but we need to stay between these two rings of the doughnut. Andy suggests a number of measures. Abandon GDP as the measure of economic health. Government policy should favour cooperatives rather than corporations. A more regional economy. A more participatory political process through local committees. Devolve most political decisions to a bioregional level. Proportional representation. Shift from private transport to public transport and bicycles. There is no problem with money as such, but we need to ban interest on loans. 'We need to design the economy in a way that it doesn't have to grow. So, it can be much more Steady State.' Taxes may be used to curb environmental damage. For example, prohibitive taxes on a private vehicle, unless it is shared. State housing would be provided to housing cooperatives. Government funded workshops would facilitate voluntary community work, repairing bicycles, sewing, sharing tools and office equipment. Proposals similar to these are common in radical reformist writings.

While this is a vision of a regulated market economy, Andy has no hesitation in calling out the problems of current capitalism. No wonder people are finding it difficult to understand climate change because the media is owned by billionaires. The state has been captured by the capitalist class. The fossil fuel companies will not give up their power easily. Conservationists ignore land ownership and have no class analysis. We need to ally with other movements working for similar goals – to

take power. Andy explains why permaculture needs to go beyond its previous anti-political standpoint.

> And it's like, if you take Bill Mollison's approach of putting your own systems in place and basically create the alternative. Well at the moment we need an alternative society. And that involves producing energy and ... We've got to the stage where our organizing needs to work at this more societal level. Recognizing that a lot of organizations now have a very similar analysis.

Permaculture people are coming to realise the inadequacy of 'setting your own house in order' as a recipe for broader societal change. They are looking for a way forward. They find radical reformism a plausible, off the shelf solution that other environmentalists are promoting.

In a similar vein, *Jasmine* endorses the decision of the UK Permaculture Association to connect to CTRLshift, a network of groups working on social and ecological solutions.

> Maybe there's an opportunity where we can actually insert some permaculture solutions at a national and global level rather than staying in our grass roots comfort zone.

She goes on to say that what these groups share is a commitment to 'social and ecological values being given priority over profit. In that sense they are degrowth groups really.' This fits with radical reformism. There is no intention to *abolish* the market and the profit motive. Instead, the aim

is ecological and social *limits*. For example, she points out, an ancient woodland would be given priority over a high-speed rail link. Jasmine argues for economic diversity. Currently, big corporations rule and small businesses are hindered by unnecessary regulations. Large monopolies are not *real* capitalism. A real market economy would be compatible with environmental goals and also 'a bit of fun'. It is typical of radical reformism to endorse small ethical businesses as preferable to large global companies. Jasmine finishes her discussion by pointing out that blueprints can get in the way of adaptation. Rather than following a blueprint, permaculture activists should begin with something that they are passionate about. In this, her argument fits with the theory that new social movements oppose grand utopian visions.

Alice is another permaculture activist whose ideas fit with radical reformism, at least to some extent. She supports the Jeremy Corbyn faction of the Labour Party. In Wales, she supports the nationalist party on account of their land politics. She is a member of the Landworkers' Alliance. She believes that farm workers are structurally oppressed by agribusiness and retail chains, the expense of land, and the concentration of land ownership. In suggesting what might be done, Alice opts for government regulation of the market. For the future she envisages cooperatives owning small farms on the peripheries of urban areas. These farms would engage with the community through Community Supported Agriculture, marketing their produce to nearby towns. This transition is to be facilitated by government.

> Land workers and the products of the land, food, have got to be ludicrously cheap. Land. Grrr! So expensive. We need to get that land. They need to look at government programs for helping people to become tenant farmers. Like the ecological land trust to set up farming situations for people, so you don't have to have like half a million quid to become a peasant. And they need to look at the price of food. They need to look at the way that they subsidize farmers for doing environmental goods.

So, the government will intervene with subsidies that reduce the dominance of corporate agriculture, by helping (the middle class) to buy land. There will be an intervention in the price of food to ensure that consumers pay for the extra costs of sustainable farming. Finally, farmers will be subsidised for running their farms in an ecologically sound fashion. Typical of radical reformism there is no mention of banning unsound practices or replacing private farm ownership with government or community ownership. While all this fits with radical reformism it is also *pragmatic*. These are the kinds of mild reforms which are politically feasible and might tip the balance towards ecological stewardship. Elsewhere, Alice suggests a more radical programme. Permaculture, she says, has always been a project of 'land-based resistance'.

> I would say that if you have no access to land you are doomed to be perennially oppressed because what choice do you have for your self-sustenance except to participate in the industrial system. Permaculture has always been about empowerment, like to take respon-

> sibility for one's own existence. Our oppression comes from our dislocation from the land. That is fundamental. The thing that we need to challenge. I like what Bill wrote. The futility of revolutionaries who attack the very system that sustains them. We need a new system.

Alice identifies the 'industrial system' as oppressive. This oppression is enabled by elite ownership of land. The effect is to make people dependent. Land must be owned by the people. Production units must be run by their workers. All this suggests anarchism, socialism or the solidarity economy.

Town and village market bioregionalism

Bioregional governance was a theme of a number of interviews. For example, it informs Andy's proposals, which I have discussed above as radical reformism. Bioregionalism is a prominent theme in the *Designers' Manual*. The concept comes originally from Kirkpatrick Sale's *Dwellers in the Land* (1985).[24] Mollison envisages largely self-sufficient villages that develop bioregional trading networks and governance. Settlements grow food for their own use – without monetary transactions being required. Beyond this self-provisioning, they trade produce on the market. Ted Trainer, an Australian sociologist and a long-term advocate of degrowth, proposes a similar vision. Rural towns operate a market economy of small firms kept under tight control by community governance. This market economy is supplemented by voluntary community work. Ashish Kothari, an Indian degrowth

activist, suggests a similar scenario under the name 'Radical Ecological Democracy' and credits it to Gandhi.[25]

I was surprised that more of my interviewees did not envisage this type of post-capitalist future, given Mollison's endorsement. There were four interviews that shared some aspects of village market bioregionalism. Julie's interview was the closest. She proposes a permaculture society which is high tech (including the internet) but low impact. It would not be a growth economy, but market transactions would still be the main mechanism for exchange. Settlements would integrate rural and urban functions. Each rural settlement would be largely self-sufficient in food. It would also specialise in some other function. For example, as an agricultural university, or manufacturing clothing, or making machine parts for vehicles. Transport would be via trains running on solar or wind power. Permaculture would become foundational and sustainable technologies developed for all industrial production. Permaculture is neither left nor right, she argues. Instead, it promotes an idealistic vision.

Three other interviewees shared some aspects of the village market bioregional vision. Karryn began her account by calling for education in ecology and social justice. An informed population would together create the new society. Renewable energy and reduction in production would permit a lot of Zone five (wild places). She envisions a capitalist society limited by ethics.

> I don't know if I'd actually say I'm anti-capitalist. There's a new publication out called 'Regenerative Capitalism'.[26] I think, like we would not be using 'socialism' now

> because of history in the US. What I think we would be doing is learning new ways of constructing our economy so that we could meet everyone's needs but not at the expense of each other or the planet. Some capitalism is probably fine, but it has to be bounded within ethics which I think it's not right now.

She cited her Bahai faith to explain that a market economy can be guided by ethics. Wealth in itself is not a problem but you would not want to live in a society where some people did not have a decent standard of living. She favours a system of money based on time banking (a Local Exchange Trading Scheme, LETS) because it values the love economy. In other words, hours of work are counted as equal, whatever the nature of the work. Accordingly, market transactions are localised within the bioregions where each monetary scheme is set up.

> We'd be organising our economies more bioregionally. We'd be doing our thinking about what are the resources we'd need and how we'd produce those within this area.

Cities are not excluded from this vision. If we put our minds to working out how to run a city sustainably, we could do it. This vision has elements of radical reformism and elements of the town and village market bioregionalism model. The key planning decisions are being made at the bioregional level and the market economy functions within those limits. National money is replaced by biore-

gional time-sharing schemes, localising economies and valuing all hours of labour at the same price.

Andrew's interview makes bioregionalism the priority. A bioregional government makes broad planning decisions and installs the underlying infrastructure for energy and transport. Production of food and industrial products is largely localised to the bioregion. Energy production is within the bioregion and transport runs on that bioregional energy supply. Industrial production is cradle to cradle, so that there is no toxic waste. Cities become sustainable. Organic waste will be treated through biodigesters, producing biogas to power homes and transport. Brown field sites will accommodate wind power, solar power and biodigester units. Food for a city will come from the urban periphery. We will have a market economy in which many people are not farmers and do not need to be self-sufficient. Instead, they can rest assured that all consumer goods have been produced sustainably. Because firms are producing for a local market, the quality of goods and services will be superior to that currently available. It could be a mistake to call this 'energy descent' as our wellbeing can only increase.

I am including this interview as an example of town and village market despite the endorsement of urbanism. There is much that is similar to Trainer's and Kothari's visions. The community (the democratic government at the local level) intervenes and sets up basic infrastructure in energy and transport. It stipulates the environmental regulations for market firms. Production and consumption are localised to the bioregion.

April's interview moves from local non-monetary self-provision to a national sphere of market capitalism. The production of food is localised, while industrial goods and services are handled by a reformed and sustainable market economy. Describing how an economy might run on permaculture lines, April said:

> We'd probably be in each other's pockets more. I imagine that we are living closer actually and sharing. And we're physically active. By getting out there and picking and digging. But we would probably not have so many rules, I mean in your garden, because we would have an understanding of what each one is trying to achieve and give them space. I think it could be fun.

Food is produced locally, and most people are gardeners. They produce for their own households and share the excess. She relates this to the gift economy.

> I believe in the gift economy, in that it lubricates our relationship when I can be generous, whereas if I'm frugal it shuts down the relationship. And it stops inviting you for dinner. And it stops me from sharing because I might need that later.

Asked about the economy at large, April envisages national money supplemented by LETS schemes. She is optimistic about changes to business practice.

> I'm actually quite excited about how business is leading the changes. In climate responsibility. Before govern-

> ment, business is doing more. Insurance companies are not going to take this anymore. This burying our head in the sand when the tidal wave's coming. They're starting to say no, we won't insure your house there. It's at risk. And farmers are starting to say, no, this is not business as usual. We're having to find how we're going to become a sustainable business. Risk management policies will drive changes. A 20 years mind set.

This vision for the economy beyond village food production fits with ecological modernisation theory.[27]

Socialist and anarchist visions

There are elements of a socialist or anarchist viewpoint in a number of interviews. A small minority propose a socialist or anarchist post-capitalism. The most clear-cut socialist position is sketched out by Mim and Damien. Damien was a long-term member of the Socialist Alliance. He still hands out how to vote tickets for the party at some elections, and for the Greens on other occasions. Damien and Mim do not think that a permaculture society could be set up solely through the voluntary action of permaculture activists.

> Damien: Because still even if you work on your permaculture you need the ownership of the means of production which might be the land. There is a base level that requires external support and you still need a supportive state. A state that is co-opted in some way to the interests of that movement.

> Mim: I think that if you're comfortable you can afford to divorce yourself from the idea that what you're doing is anti-capitalist. Your land isn't being taken away from you and you can go to the shop and buy your staples. You can afford to ignore the need to challenge the bigger systems of production. Most permaculturists would express some solidarity with peasants but a whole stack of them would not have met a peasant.

There were three other interviews that fitted to a certain extent with this position. Natalie is critical of permaculture activists who do not see the necessity to mount a direct challenge to the capitalist class. Alice attacks the concentration of land ownership in the UK. Loretta is trenchant on the topic of capitalism without committing herself to any particular post-capitalist future.

> Capitalism and permaculture do not go together. You can't just have continual growth. There is no balance in that, right? Capitalism – that's what got us here. That was the big machine that came and raked up the environment and destroyed the ecosystem to further the goals of a few really tall, resource sucking trees with very small canopies.

I hesitate to nominate this as 'socialist'. In the US context, the term 'capitalist' has become a synonym for what other anglophones call 'laissez-faire' economics and anything to the left of that is considered 'anti-capitalist'. Given the antipathy to leftist initiatives in the USA, Loretta sees a

role for permaculture as a ginger group. The danger is that permaculture itself is dragged into toxic political conflict.

The only clearly anarchist interview was Naima's.

> I am definitely a mutual aid anarchist, not an everyone for themself anarchist. Ultimately to me there would be no money. I would prefer mutual aid and collectives. People doing what they can when they can and acknowledging when other people can't do the same amount.

In other ways, her vision fits with village bioregionalism.

> I think that a sustainable pattern of settlement is biome and catchment-based settlement. So appropriate numbers of people according to water available in each catchment. On the right kind of land that doesn't need heaps of input. I don't think anyone needs to be self-sufficient. If you're trading with your neighbouring catchment community that's fine but if you're shipping containers across the seas that's not. Lots of small ways of doing a thing are better. Like electricity. In your catchment you might have wind power at the top of the hill. You might have micro hydro. A waterwheel. Rather than centralise it all.

Postmodernist rejection of utopian thinking

While social theorists argue that contemporary 'postmodern' social movements *reject* blueprints, only one interview fitted this analysis. Dave cited his disillusion

with Marxist revolutions in the third world. As a young man, he travelled to report back on successful struggles. Socialist parties that had been promoting the right viewpoints were often less attractive in office – repressive and drawn to mega-scale white elephant projects. Meanwhile grassroots NGOs tackling small issues were actually more successful. 'Ideology can be useful but also it can be the kind of purist, fanatical, fundamentalist tendencies which it also encourages.' He likes permaculture for its devotion to practical changes. 'Whereas in the overall picture I might certainly see myself as socialist, actually in practical strategies, I think that's not so important.'

Dave refused to envisage a future in which permaculture had become a dominant social ethos. He argued there is little chance of permaculture becoming mainstream, given the diversity of society. The failure to convince people of the climate emergency 'shows how difficult it will be to get everybody to even consider permaculture as their framework for organising human activity. So, I can't even envisage that scenario.'

Such a position is an outlier. Permaculture does not fit the model of new social movements outlined in social analysis. It is rare for permaculture participants to be at a loss when asked what a permaculture society would look like. Nevertheless, views on this topic are diverse in the permaculture movement. While there is a central tendency, radical reformism, this has a variety of individualised manifestations. This central tendency is itself a minority of the responses taken as a whole. Bioregional government with localised money is almost as strong a tendency. Interviewees mix and match from a variety

of scenarios current in environmentalist and social justice thinking.

ETHICS VERSUS STRUCTURAL CHANGE

Quite a few interviewees prefaced their remarks on an ideal social structure with this caveat. Given permaculture ethics, *any* political or economic system could achieve sustainability and social justice. In answer to a question on what a society would be like if it ran on permaculture principles, Mark said:

> For me, Terry, it gets back to the ethic. If you're making all your decisions predicated on the ethic, then you can't do anything bad, because you think, is what I'm going to do good for the earth, good for people, and is it about sharing any excesses?

Similar comments were made by Petra and Karryn. No social, political and economic structure is *particularly* apt to implement permaculture ethics. All options are equal once a permaculture world view is accepted. Perspectives of this type are typical of many religions. There is no need for structural change. If everyone behaved ethically, we would be fine – not an end to kings but a 'good king'. In religious views of this type, an ethic of humility, honesty and kindness opposes ruthless elites with a critical programme of cultural reform.[28] While this emphasis on the centrality of ethics may be a common sentiment in the permaculture movement, quite concrete plans for

system change were in fact proposed by almost all the interviewees.

URBAN DESIGN, TECHNOLOGY AND DEGROWTH

Almost all interviewees believed a permaculture society would have cities. Holmgren was cited as arguing that in the near future the building stock we now have in the cities will still be in use. Interviewees looked forward to an expansion of urban agriculture.[29] Cereals would be imported from the surrounding countryside using trains or small trucks run on biogas or renewable electricity. Private cars would be replaced by electric trains, buses or bicycles. Some urbanites would move to the country, leaving more space for agriculture in the city. Julie was the only interviewee to argue for an end to cities. In her vision, rural towns would be self-sufficient in food but would trade specialised industrial production with other rural towns.

There were no interviewees that were anti-technological. Some were enthusiastic about digital technology. Others favoured redesigning industrial production to be sustainable. It was typical for interviewees to anticipate transport run with renewables. Alice combined attacks on the 'industrial system' with calls for new technologies to assist regenerative agriculture. She worried that the label 'organic' had been appropriated by supermarket chains mass producing food. We should distinguish *local* production from mass produced organic food. So, her use of the term 'industrial' refers to mass production, an alienated workforce, the domination of machinery, the externalisa-

tion of environmental damage. The term is not meant to cover *any* use of technologies that we might normally call 'industrial'.

There are certainly currents within permaculture that *are* anti-technological. For example, Derrick Jensen supports permaculture as a pathway to a post technological society.[30] Howard Odum, cited by Mollison and Holmgren, maintains that technological complexity depends on fossil fuel energy – and will not be possible long term.[31] But the permaculture activists sampled for this book were comfortable with a selective and sustainable use of technology. At the same time, interviewees stressed the necessity to reduce consumption. Andrew said that we needed to realise we could live very well without the absurd energy consumption levels now current in the rich countries. Mark and Kate stressed the importance of implementing permaculture ethics by reducing consumption and distributing surplus. These views were typical.

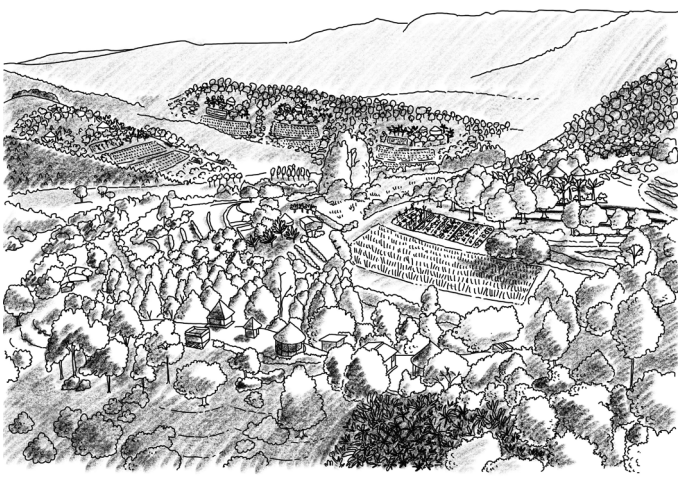
PERMACULTURE – A WORK IN PROGRESS

This chapter has given a detailed picture of the way permaculture participants understand strategies for change and envision a post-industrial future. They do not follow the permaculture canon as the be all and end all on these topics. Some passages endorse the anti-political strategy envisaged by Mollison and Holmgren. But others call for permaculture to become *more* political and work on policy with allied progressive tendencies. Only a minority closely followed Mollison's vision of an ideal permaculture society. While Mollison envisages a bioregional

federation of rural villages, many interviewees endorsed sustainable urbanism and looked to ecological economists for ideas on state intervention. While Mollison and Holmgren critique 'industrialism', participants quoted here promoted the internet and solar panels, along with sustainable industrial production. Some themes from permaculture writings are strongly supported. The end of the fossil fuel economy, bioregionalism, degrowth and sharing the surplus. Activists draw on strategies for sustainable agriculture from permaculture works and go to the ethics and principles for guidance. Permaculture is a work in progress, developing in response to events, rather than fossilised in a set of texts.

CHAPTER FOUR

Permaculture Practice: Prefiguring System Change



Many activists in the environment movement see capitalism as a problem and calls for 'system change' are common. To be candid, a revolutionary break with capitalism seems unlikely in the next decade. One alternative is to ameliorate capitalism through welfare state and environmentalist reforms. Yet even in their heyday, welfare states did not manage to deal with many problems of capitalism. Now, when investors can easily take their money overseas, it is even more difficult to implement reforms to a national economy. Another alternative is

joining a party in waiting for the revolution and devoting our energies to raising awareness. The permaculture movement rejects both these options and favours building the alternative from the ground up.

THE PERMACULTURE APPROACH TO SYSTEM CHANGE

As founders, David Holmgren and Bill Mollison explain, the permaculture strategy for system change is that prefigurative institutions developed now will enable a transition from 'industrialisation to an information rich but local and autonomous land-based post-industrial culture'.[1] Permaculture writers regard energy descent as inevitable but hope to establish a society based on permaculture ethics – care for the planet and people, along with redistribution of the surplus.[2] The aim is to grow a participatory economy by avoiding entanglement with centralised political systems:

> We should cease to look to power structures, hierarchical systems, or governments to help us, and devise ways to help ourselves.[3]

> The best most of us can do to build a more secure and safe world is to foster local community connections and reciprocity. The more connections, understandings and interdependence, the greater resilience we will have to the inevitable increase in trouble that will flow from the centralised system failing to maintain its functions.[4]

The future society will develop out of the multiplication and strengthening of current options. Permaculture writers imply that these institutional forms and their embedding in markets, money and wage labour will be retained in a post-industrial society.

1. They expect that non-monetary self-provisioning, along with 'household and community non-monetary economies of gift and barter' will grow to take up a larger part of the economy.[5]
2. Another large part of the economy will be constituted by ethical small businesses. Holmgren describes a vision for *RetroSuburbia* in a neighbourhood of the near future with 70 households. In the neighbourhood there are ten households with attached commercial premises, such as a grocery shop, car mechanic and miso-making business. In 15 households there are residents who have 'a mobile livelihood' which takes place outside the neighbourhood. Another 15 households have residents who go out of the neighbourhood and commute to work.[6] In other words, all of these livelihoods are construed as taking place in some kind of money-making business.

Mollison stipulates that commercial activities should be carried out in the spirit of 'right livelihood' – a work practice informed by ethics.[7] Mollison argues that such businesses can be very effective in the market and recommends that management 'give staff control of their own areas, encourage them to develop new ideas, and to follow guidelines and values, rather than a rigid set of rules'.[8]

3. Permaculture founders also expect various kinds of money-making cooperatives to be part of the new economy. Mollison cites the Mondragon collectives in Spain as a model. Such organisations give more scope for democratic control by staff, 'the more intense and more democratic operation of cooperatives demands that co-op staff must participate in planning, seriously contributing to policy, procedures, and innovations'.[9]
4. It is expected that not for profit NGOs will continue to be relevant in the new economy as they are now for permaculture practice in developing countries.

These writings do not envisage the *establishment* of the new economy as in any way hindered by the deeper structures of contemporary capitalism. For example, for Mollison the practice of simplicity does not require any political action, and this also applies to the:

> adoption of an ethical basis to action, to the placement of money and resources, and to the determination to act in accordance with one's beliefs. All of these can occur independently of political change … when enough people change, then political systems (if they are to survive) may follow.[10]

PREFIGURING INSTITUTIONS

There are some striking parallels between the permaculture vision of transition and writings from some social scientists on the left – for example, Erik Olin Wright's theory of 'real utopias' and Julie and Katherine

Gibson-Graham's concept of the 'community economy'. Olin Wright points to the failures to make a successful revolutionary departure from capitalism or to substantially ameliorate capitalism through the welfare state. Instead, he looks to 'real utopias' that 'embody in varying degrees the values of equality, democracy, community and sustainability to a greater extent than does capitalism'.[11] Such alternatives prefigure post-capitalism: 'alternatives that can be built in the world as it is that also prefigure the world as it could be'.[12]

Julie and Katherine Gibson-Graham regard it as 'capitalocentric' to see the economy as dominated by capitalism. The capitalist firm, with wage labour and the exploitation of workers is just one economic format of current society.[13] There is 'a plethora of economic activities that do not take the form of wage labour, commodity production for a market, or capitalist enterprise'.[14] Leftist strategies can develop alternatives within this field of options. The aim is to build economic units under some degree of community and worker control, with an ethical emphasis on 'care of the community and its environment'.[15]

Olin Wright and Gibson-Graham expect that these institutions would continue in their current economic form in a future post-capitalist society. For example, cooperatives would still operate as worker owned businesses, paying their members for work performed. Their success as businesses would still depend on selling products on the market.[16] Wright spells out the implications in describing the future post-capitalist economy. A large part of the economy would be in the hands of cooperatives and ethical businesses, selling goods and services

on the market. Many people would still be working for wages. There would be an interventionist state, regulating the economy and providing necessary public services. Along with this, the non-monetary sector of domestic work and voluntary community work would expand.[17] These authors do not fear that the overarching structures of the capitalist economy will prevent such prefigurative institutions from being established or maintained. For them, money, wage labour and markets are in no way inimical to ethical business practice. They expect these economic institutions to play a major part in a post-capitalist economy.[18]

So, a great deal of this is very similar to the permaculture view of the transition to post-industrial society. The main difference is that such academic writers tend to assume that an interventionist state will facilitate the new economy while permaculture writers tend to assume the increasing irrelevance of the current state system.[19]

THE GIFT ECONOMY APPROACH TO PREFIGURATIVE INSTITUTIONS

The 'gift economy' concept represents a radical departure from these visions of a post-capitalist economy.[20] In keeping with that, it adopts a very different analysis of prefiguring institutions of the current period.

A gift economy is proposed to be a society of voluntary producer clubs, making arrangements (compacts) to supply their products to particular consumers – a network of overlapping and interlocking exchanges. Reciprocity is a long-term effect, rather than a tit for tat calculation. For

example, some people might produce food as their gift to the community, while others would make commitments to produce industrial goods. Compacts to produce and distribute would allow predictability. In this vision of utopia, there is no place for money or the state. Transactions for distribution are decisions made voluntarily by producers and consumers, without money being involved. We can think of them as 'gifts' from producers to consumers, but without the arbitrary unpredictability of gifts today. There is no state. Decisions are made through negotiations between affected parties.

Within the framework of the gift economy concept, the prefigurative and transitional institutions that permaculture favours are best seen as *hybrids of the gift economy and capitalism.* There is some control of production by the workers or by the community more broadly. There is also some degree of distribution by 'gift', in other words without regard for monetary recompense. This distribution is intended to benefit particular people or the natural world, expressing the permaculture ethic of caring for people and the planet. These aspects of a hybrid are conjoined with aspects of the current capitalist market economy – for example, wage labour, the sale of the product as a commodity. For such institutions to work in the current situation they have to pay attention to both aspects of their operation. It is difficult to reconcile these contrary aims. Looking at things from this perspective, it is not expected to be easy to establish a hybrid. Some of what a hybrid is doing contradicts the logic of the market economy and suffers from market sanctions because of this.

Capitalism is not just a set of laws and regulations that define ownership. It is also predicated on predictable

market behaviour. Consumers maximise private satisfactions for the least cost. Owners of the means of production maximise profits. Hybrids do not operate according to these presumptions. Instead, they attempt to operate an ethics of care, to maximise use values rather than exchange values. In that way they can undermine capitalism and point the way to an alternative.

AS A STRAIN IN THE MOVEMENT

In the permaculture movement one sign of the tensions implicit in prefigurative hybrids is a perceived division between those who want to use their permaculture skills to make a liveable income and those who stress the problems of capitalist practice. At the permaculture international convergence in Cuba in 2013, I was speaking to Robbo, a leading figure in the Australian movement. A conflict had developed in one of the most successful permaculture clubs in Australia. The conflict concerned a member of the club who wanted to promote her permaculture business on the club's website. Many members objected, saying that the club should stick to voluntary community work. Robbo supported the business owner:

> There are people like me who want to get a right livelihood and are actually doing it. We are constantly being harassed by those who are merely talking about how to fix the world – the coffee set. I ask them, where does all that coffee come from? They have no interest in broad acre agriculture and stigmatize permaculture people who try to make a living from permaculture because

> they are doing business. They are ignoring the plight of farmers. People who are setting up permaculture businesses are people who want to go out there and do it, as opposed to people who think we should not get any money and should maintain a peasant lifestyle.

The stress implied by hybrids is often perceived as based in some unique local context or stemming from inevitable human failings. From the gift economy perspective, these local issues mask deeper problems. So, let's look at some examples.

A CSA FARM IN THE UK

Alice is a permaculture activist from the UK. Currently she is living in the UK and is a member of a cooperative of eight members running a CSA farm near Caernafon in Wales. They have 31 acres of land and are intensively farming 10 of these to grow organic vegetables. Some 120 households from Bangor and Caernafon have become participants in their CSA scheme. These clients pay to receive a box of vegetables each week, depending on what is in season. Some other customers come to the farm to buy vegetables. There are some sales to restaurants and shops. The work is done by the cooperative members, assisted by one or two volunteers.

Market aspects

The market aspects of their business follow. They sell the vegetables they produce as commodities. Their customers

can compare what they get from the CSA with other options. Their means of production is privately owned land, the property of the parents of one of the members. It has a market value and could be sold on the market. This free loan of land is their best option given the price of land and their monetary resources. The members of the cooperative are joint owners of a business and depend on this income for their access to goods and services beyond what they produce on the farm. So, this is a job and can be compared to other employment options.

Non-market aspects

The gift economy aspects of the UK CSA are just as significant. The cooperative members have control of their working conditions and are doing something that they believe is worthwhile, growing food and simultaneously caring for the environment. This is 'right livelihood' in the sense used by permaculture writers. In the daily operations of the cooperative, decisions are taken by consensus. There is a flat organisational structure and leadership roles are allocated to each member – for example, running the greenhouses or doing the accounts. The volunteers, who are usually two people at any one time, are gifting their labour to an ethical project.

Alice talked about the necessity to gain community control of agriculture. She believes that the CSA is a step in this direction. The community is involved as contracted customers of the CSA. Their purchases of food through the CSA are an expression of their political support for what the CSA is doing. They are starting to control the

means of production of their food. Explaining these ideas, Alice said: 'Living in Palestine and seeing how the occupation targets farmers and targets people's connection to the land really brought it home to me in an indelible way that you only empower yourself by being connected to the land. If you have no access to land you are doomed to be perennially oppressed.'

Another non-market aspect of the project is that the farm has been lent to the CSA free of charge. As Alice put it, the owners are 'angel investors'. The landowners are not making money by using their means of production for private benefit. The CSA is intending to gradually buy out their angel investors by setting up community ownership through shares. This would put the means of production more firmly in the hands of the workers and their customers.

The customers are also making a partial gift of their money in buying from the CSA. They are choosing a less convenient means of shopping. They are required to accept a box of vegetables from a list decided by the CSA. They have to come to the farm in their own time and fill their box according to the instructions for that week, rather than just popping down to the supermarket. They have signed a contract to purchase for a period of months. In foregoing these aspects of consumer convenience, they are making a gift – defying market logic through a purchase that is not optimal from the perspective of their private benefit as food consumers. They are enabling the CSA cooperative members to enjoy a less alienated form of employment. They are also giving to the other species which benefit from organic farming. They

are buying food that is locally produced and minimally packaged, saving on fossil fuels.

Tensions and limitations

The experience of this farm points to tensions typical of hybrids of the gift economy and capitalism. The competitive pressures of capitalist agriculture mean that the cooperative's members are not being paid well. The CSA charges £40 for a small box of vegetables and £60 for a larger box. Adding up the income from their three kinds of customers, they are getting about £7,000 per week from sales. This has to cover eight cooperative members and the costs of running the farm. To make this work, the cooperative has decided to pay members £20 for a minimum six-hour *day* of work. They get bed and board for free and can apply for a government grant to supplement low-income earners – £50 per week. A typical income for a week is £150 plus bed and board. This is low by UK standards. The median income for full-time wage earners in the UK is £584 per week.[21] Cooperative members could not save for a house, run a car or send their children to university.

I suggested to Alice that the price they had set for their vegetables was quite low. She traced this back to competitive pressures coming from the commercial agriculture sector:

> Probably yeah, probably. It depends, like now some of the industrial organic farm movement is like ruining this shit. Same as they have in the States. So, now ALDI have gone organic, all their vegetables are organic appar-

> ently. They're not local. Who knows really, how they are farmed. Organic doesn't mean anything anymore, we need to re-label like Fresh, Local!

One effect of this is that some of the cooperative members also have other jobs to make ends meet – teaching permaculture, building work, accounting: 'Like some people do other jobs. Like one of the guys has got some kids so he needs to earn more money than we can really pay him so he does two or three days here and he does building work with another friend when he can get it.'

So, it is hard to set up a cooperative sustainable farm because members must expect some financial sacrifice. The likely effect is that it will be difficult to maintain longer-term commitment to this lifestyle choice.

The cooperative's hold on their land is uncertain. It depends on the willingness of the parents of one member to maintain this arrangement. The cooperative intends to offer shares in the farm through an ethical bank and buy out the current owners. However, this has not been achieved yet, after seven years of the cooperative's existence. Alice traced problems with sustainable farming to the unequal distribution of land in the UK. While the land is expensive, competition between the supermarket chains means that food prices are rock bottom, squeezing farmers and making it supremely difficult to set up a community agriculture hybrid. This market pressure discourages sustainable and local agriculture. Toxic chemicals and large fossil fuel powered machinery save on labour costs. Food from greater distances can be cheaper if it comes from countries where labour is cheap. Economies

of scale favour large holdings, making it difficult for small groups of friends to buy a farm.

As a final issue, Alice mentioned the social difficulties of running a cooperative democratic workplace. She traced this to a socialisation that relates to the competitive market economy:

> Recreating family or the tribe or something like that. But we're underskilled for it. Like our entire upbringing does not lend itself to these things. We are taught to be ruthless individualists … Because that is the thing, again and again I have seen it. It's people who derail projects.

THE CHIKUKWA PERMACULTURE PROJECT OF ZIMBABWE AND CELUCT

The Chikukwa clan of Zimbabwe[22] lives in the mountainous eastern district of the country. There are six villages, with approximately 7,000 people in all. Households are spread out over 15 kilometres of hills and valleys. In 1992, the village spring on the mountain of Chief Chikukwa dried up. This was the catalyst for an amazing set of changes. A small gardening club, the 'Strong Bees', organised the community to restore the spring. To do this they called in permaculture advice from a national permaculture club, so starting a transformation of their six villages: a transformation which controlled soil erosion on their steep slopes, improved food security and empowered their communities to mediate conflicts. Their original gardening club became CELUCT (Chikukwa Environ-

mental Land Use Community Trust), organised to educate farmers on permaculture techniques to enhance their household food production.

The decision to concentrate on subsistence first, rather than attempting an expansion of commercial production was a distinctive feature of this transformative project. This enabled the project to pay attention to food security.

> Our local economy is based on agriculture, we are getting the produce from our land. And when the action group started, it involved different age groups. Who were much concerned about healing the land. So that they would produce enough to feed themselves. So, you will find that what is more important here, is the food security.

The villagers used water collected from rooftops and yards in their vegetable gardens and orchards. They irrigated their cropping fields and stopped erosion using contour bunds. They built their topsoil with green manure, mulches and compost. They managed their livestock to collect manure and consume garden waste.

> And then after that, we would have small livestock, and we can pick vegetables from the garden, and feed our small livestock, and they will produce manure, that manure will turn then to the garden, and also, we can use those for proteins.

The communities reforested the hilltops and ridges to secure their rainwater catchments. These woodlots

ensured a plentiful supply of wood for building and cooking fuel. They saved their springs by putting in check dams and planting the gullies with indigenous trees, fencing the critical areas. They diversified their agricultural production. For example: maize, bananas, tomatoes, goats, chickens, pigeons and cattle at the Yaledi farm; sugar cane and castor oil at the Mphande farm; kale, carrots, peas, potatoes, beans, groundnuts, tomatoes, potato, canola and tomatoes at the Juwaki farm; bananas, pineapples, oranges, mandarins, mangoes, avocados, cassava and pomegranates at the Juwawo farm. The rich diet of the Chikukwa villagers today ensures adequate protein, vitamins and iron, as well as essential carbohydrates. Virtually every household has equipped itself with small livestock, an orchard, a vegetable garden and cropping fields, fodder, wood and leafy mulch plants – all integrated so that they work together making use of water retention, slope, aspect and labour-saving design principles. Chikukwa's adoption of permaculture techniques proved effective when nationwide food shortages struck other parts of the country following a drought. While in the 1990s their hills were barren and their soil poor, their landscape is now verdant and lush, with houses set in orchards and gardens, cropping fields stepped with contour banks planted with vetiver grass, and hilltops and gullies planted with forests and woodlots.

Market aspects

Aspects of this project locate it within the market economy. Farming land is owned individually by house-

holds rather than by the community. The exception is the community grazing area. The Chikukwa project centre is owned by CELUCT and the land on which it stands has been allocated by a headman of the clan. The project depends on paid employees – a staff of development workers, a gardener and cook. These staff depend on their wage from the centre to make a living. The centre pays small fees to villagers when they host a farm visit or help with the catering. Purchased commodities such as a car, hoes, fencing wire and cement are essential to the project and in the lives of the villagers. The project helps villagers to market some of their produce, for example, honey.

Non-market aspects

In many other ways the project expresses the economic logic of the gift economy. The project depends on aid funding from Germany and the UK. The funding organisations are community NGOs supported by middle-class citizens concerned by poverty in developing countries. They are using their incomes to care for the planet and other people. In doing this, they undermine the power of the market to determine the distribution of wealth, going outside the market to provide wealth to people who have not 'earned' it in capitalist wage work. The project has mainly concentrated on household food provision – on non-market production. Doing this, households are relieved of pressure to earn an income for bare necessities.

> Just say I want to buy fertiliser. But we don't have the resources to buy. Why not make a compost? Where I

> can use manure from my small livestock or from my goats. Or from my cattle. Rather than buying artificial fertilisers.

The project depends on the voluntary labour of villagers, donating their time to improvements that assist the whole community and not just their own individual household. For example, voluntary working parties constructed the contour bunds that stretch across the landscape, they erected the fencing that has protected the gullies from cattle and saved the springs and creeks. The project creates opportunities for community control of the means of production. Village clubs, for example, the permaculture club or the women's club, approach the Chikukwa centre to make requests for assistance. It is these requests that form the backbone of the action plans for the project.

> We gather, say five families, who have a common aim and maybe they would like a fishpond, and they write their proposal, give it to the subcommittee, of that village, and from that subcommittee, they will give it to the permaculture representative of that village. And that representative will take the proposal to the CELUCT management team, and they discuss together. If there is assistance, that will be needed there, they will be assisted.

The project has developed a community mediation process to settle disputes. This process acts as a brake on decisions based in private ownership. For example, a workshop was held to sort out a dispute after one household began clear

felling timber on its holding, causing erosion further down the slope. The mediation was attended by 50 locals and hosted by the CELUCT team at a village house. A decision was made to stop this clear felling and to set up voluntary working parties to repair the gully erosion.

Generosity and kindness are key values promoted by the project. For example, there is a club for those affected by HIV/AIDS which is intended to develop more effective support in the community and to assist people to be open about their status. For people who are suffering financial hardship the project runs community cropping fields that can supply necessary food. Symbolic gifts stress the relationship between the community and its organisation. The community mediation explained above was attended by the project management team who brought morning tea in the form of cordials, white bread and apples, all treats within the local context.

Tensions and limitations

The project also experienced tensions related to its hybrid character. As part of a wider district initiative CELUCT developed a cattle management project – an attempt to strengthen community control. Resistance to the cattle project aimed to protect marketable assets and wage income. The cattle project was initiated because there had been overgrazing on the community owned pastures, resulting in poor pasture production, erosion and soil compaction. In addition, poorly supervised cattle had roamed at will, destroying some crops and food gardens.

Prior to the project, cattle were managed by each household. The household cattle would be assigned to young relatives, who got bed and board in return, a form of apprenticeship. These adolescents would take the cattle to the community grazing area in the morning and bring them back to the pen (kraal) at night. The effect was to emphasise the private ownership of cattle by each household, even though all the cattle were making use of the community pasture. The consequence was insufficient management of the community resource.

The solution developed by CELUCT was based on rotational grazing. The community cattle are herded into one of seven paddocks on the grazing area – marked with painted stones. After the grass has been thoroughly eaten down in that paddock, they are moved to the next one. The aim is to rest each paddock for most of the year and to stimulate regrowth by occasional hard grazing, making a softer soil, infiltrating water and increasing the nutritional quality of the grass. To prevent cattle doing damage in the villages and to facilitate this rotational method, a grant was secured to pay for a moveable kraal. The whole community herd can be kept on the grazing land at night. During the day, the cattle are supervised by paid herders appointed by CELUCT, their pay being levied from the cattle owners.

In 2014, the cattle project was facing some serious challenges. Paul Yaledi is a locally wealthy farmer with 18 head of cattle and a small business growing coffee beans. He was appointed by CELUCT to learn about rotational grazing from Alan Savory's institute, with the intention that he would come back to Chikukwa after a

year and train local herders (2012–13). However, Paul wanted his employment extended after the contract had expired. CELUCT did not have grant money for this. In response, Paul sabotaged the project. He told the other cattle owners that CELUCT had grant money allocated to pay herders – there was no need for a levy on them. The CELUCT team had 'eaten the money'. He pulled his cattle from the project and persuaded others to do likewise. This sabotage was very effective. There are 91 stock-owning households in the Chikukwa villages (of about 1,000 households in total). In the first instance 54 joined up to the CELUCT programme but by 2014 the membership was down to 27. These were mostly older people or single women – people who found it difficult to organise their own herders. Of the 972 cattle in the villages, there were now only 152 in the programme. With most of the village cattle outside the programme, rotational grazing could not be achieved. It was impossible to *rest* any area of the community grazing land.

Villagers who left the programme cited a number of concerns:

> The way the cattle were being looked after last year was not satisfactory. Some died, they all lost weight, one was stolen. They were not being fed well. They should improve the ways in which they look after cattle. The cattle are clustered together and are eating all the grass. The grazing pasture is not sufficient.

Up to six cattle in the programme had died. According to the CELUCT team, the cattle had eaten plastic waste in the

villages, which had blocked their digestion. They blamed the owners for not supervising their cattle adequately. The owners who left the programme maintained that the cattle had not been getting enough to eat. By the end of each rotation there was not much grass left in each designated paddock. They believed some cattle had caught an infection because the cattle were now being kept closely together. They worried that CELUCT might sell some of the cattle to rationalise stocking rates. They distrusted the CELUCT herders, claiming they were untrained. Meanwhile Paul Yaledi was urging the CELUCT herders to demand more pay and refuse to supervise the cattle during the day if their demands had not been met.

Beyond these claims and counterclaims there are broader issues. CELUCT was attempting a more effective management of community resources – to reduce erosion; to improve the viability of the pasture; to protect village gardens and fields. This attempt was resisted as different players defended their stakes in the market economy. Paul Yaledi was hoping for a long-term paid employment. The cattle owners were protecting their marketable resource from what they perceived as dangers to that resource. The herders wanted better pay and conditions. Many cattle owners distrusted the CELUCT management and could be convinced that they might use their gate-keeping position to 'eat the money' from international donors. They did not want to pay money to CELUCT to handle the herding. It seems likely that CELUCT will manage these problems through a different model for organising the cattle herding. Yet tensions between non-market approaches and market constraints will no doubt continue.

IDEP IN BALI

IDEP is an Indonesia-wide organisation with its headquarters in Bali. It began its work as a permaculture NGO in the late 1990s. I interviewed the founder and long-time chair of IDEP, Petra Schneider as well as two of the staff, Doni Marmer and Sayu Komang. The activities and organisational foundations of IDEP can be considered as a hybrid of the market economy and non-market gift economy.

Market aspects

There are a variety of market aspects to the operations of IDEP. The staff of IDEP are paid workers, depending on IDEP for their incomes. Most of this income comes from donations from market-based businesses. As Doni understands it, most of these businesses are engaged in Corporate Social Responsibility initiatives to minimise their tax and promote their brand name.

IDEP devotes a lot of its attention to supporting local people to grow non-market household food crops. However, this is almost always combined with assistance to earn income from marketable production – using less expensive farming methods, developing high-value crops and adding value to their raw products.

For example, Sayu talked about the way she started out with her own family:

> Now in my extended family we are developing our own business even though it's small. We are trying to involve 10 more households so that they can produce and live

> from their own gardens. At the beginning they thought there were no jobs available for them in the village. Now they are trying to provide new jobs by cultivating their land, processing their crops, which they used to sell fresh at low prices. Now they can improve their success by processing the crop and selling it at a higher price. I helped them because I have access to the market. Many people were contacting me, saying, 'Sayu, because you're working with this community, can you help me get these items from the community, and I'll buy them at a fair price'.

She explains the necessity of being successful in the market even if you are growing all your own food needs:

> I know that we need to think about business, the profit and economic value of it in order to pay for education.

IDEP has set up a market-based business in seed selling. Customers tend to be expats from the first world, now living in Indonesia.

Non-market aspects

The non-market gift economy aspects of IDEP are equally significant. The staff of IDEP are also environmentalist activists who want right livelihood, and have made a decision to pursue these careers, even though they are not well paid. For example, Sayu talks about the other 'activist groups' with which she was involved before she discovered permaculture. Petra explained how she came to under-

stand that permaculture was a way of making changes in Indonesia that would not be perceived as threatening. To initiate their project, they organised a permaculture PDC course, inviting:

> many environmental leaders throughout the nation together in one place so that they could have a dialogue. It was funded out of our own pockets. You know, this is the thing we can do to help. We got over two hundred applicants for that course. So, it was like wow, all of a sudden, now we know what works. It was a full PDC. Robyn [Francis] was the teacher, bless her, it was an intense course.

This initial course was like many of those organised by IDEP in the early years. They were free of charge to the Indonesian attendees.

IDEP as a not-for-profit NGO depends on donations rather than on business profits. Its expected role is to care for communities in need rather than make money. Much of the work of IDEP stresses the necessity for non-market solutions and relates this approach to writings in the permaculture canon. So IDEP encourages farmers to use fertiliser and pest solutions produced on their own farms, and to grow their own food for basic food security. Sayu had much to say on this approach:

> This is how they are not only growing vegetables that they can sell to the tourism industry but also those that they can consume. And it turns out like that actually because of the ethics. How firstly we have to become

> self-sufficient, then we will be economically safe. I also apply this approach to rice farmers and connect them with farmers who are growing other crops, because we believe we cannot do it all by ourselves. And this is actually making the community stronger, and so we can run permaculture in real terms.

After the Bali bomb in 2003, IDEP developed its work in disaster management and was invited to help in other parts of Indonesia where disasters such as the tsunami had struck. To a large extent, they assisted victims in food growing for home consumption. Doni mentioned both household consumption and sustainable (cash income) livelihoods:

> The main purpose of IDEP right now is actually to increase community resilience. With the insurgence of natural disasters that keep repeating and also environmental degradation. So IDEP works with local communities to increase their capacity to be able to, you know, eat and also to have a sustainable livelihood, from their environment.

They also receive funding to work in impoverished areas of Indonesia where commercial exploitation is endangering biodiversity. For example, to relieve the market pressure on forests. These actions are gifts to the natural world – 'caring for the earth' in permaculture ethics. A good example is their work in Talaud in the north of Indonesia:

> They have an endangered species called the red and blue lory. We work with local communities to help them create their home gardens, so they have a sustainable supply of food. They don't need to use pesticides, they don't need to use chemical fertilisers, because most of them kill the soils and kill the plants that are useful for the birds to nest and to feed. With that we see a lot of opportunities for them to develop products. And we see they have a lot of coconuts, so we help them to make a business by making virgin coconut oil. As their awareness increases, they understand the value of the environment. They work together with nature. They [used to] inject their coconuts with chemicals because of pest infestation by grasshoppers. We introduced the Integrated Pest Management system. We killed the eggs of the grasshoppers by spraying either Neem or salt. And also nurturing the species that become the natural predators of grasshoppers. Most of them are birds, so tree plantations to provide nesting sites. (Doni)

IDEP is effective by referring people to ethical and religious beliefs that defend nature and to practices of regenerative land care that pre-date the market economy.

> We call this 're-introducing' permaculture because they actually have that knowledge from their ancestors. (Sayu)

Tensions and limitations

We can also consider how the market economy restricts the possibilities open to IDEP and compromises their application of permaculture ethics.

Doni explained Petra's response to the economic crisis that preceded the fall of the Suharto regime in the late 1990s. Balinese rice farmers were growing rice for their own families and also for the rest of Indonesia. The increased price of agricultural inputs meant that many farmers lost land that had been in their families for generations:

> She saw that a lot of farmers struggled from the impact of debt. And because of the high-intensive [agriculture] of the Suharto era, using a lot of chemicals. And a lot of them were trapped in debt. The subsidy went because of the economic crisis. They could not afford to buy fertilisers, seeds, seedlings or whatever. And they faced their end.

Yet as we have seen, most of the projects that IDEP has been engaged in recently are *outside of Bali*, in regions that have experienced disasters or regions that are economically marginal. I asked Doni about this, suggesting that the problems of agriculture that concerned Petra in the first place are still relevant to Bali. Commercial farmers are even now using large quantities of toxic pesticides and synthetic fertilisers and experiencing economic difficulties and health problems because of that. I asked why IDEP was not working more directly on these issues:

> A lot of donors don't want to work in Bali anymore because they think Bali is advanced. The economy is already good. We find a lot of struggle to get funding to support our projects in Bali.

So here, they are limited by their donor's conceptions of what a problem is. The donors conceive poverty as a problem and assume that it comes about because people are insufficiently integrated into the market. However, they do not conceive a successful market economy, that of Bali, as 'problematic' despite the environmental and social problems that are evident to IDEP. IDEP is constrained to work on issues that are seen as a problem by their donors, the ones whose market power gives them the resources to influence IDEP projects.

Doni went on to say that the projects IDEP is doing *in Bali* are mostly funded out of IDEP's own resources. He instanced a programme to provide open pollinated organic seeds. They had arrangements with 50 Balinese farmers to provide the seeds and were marketing them to buyers not just in Bali but across Indonesia. I asked who the customers were:

> At the start of our business, mostly expats. Those who are concerned about the environment. But nowadays, because of the increase of online shopping, everyone from across Indonesia. Mostly they are people who want to do home gardening.

So, these organic seeds are being marketed to those outside the mainstream of commercial food provision in Indonesia – it is environmentalist hobby farmers and niche options that make market sense for IDEP. I persisted with this line of questioning by asking Doni why commercial rice farmers in Bali (and Indonesia more generally) were not taking up the option of organic agriculture:

> They are starting to change. They know that using the chemical is actually so expensive nowadays. The subsidies keep decreasing and decreasing. And with Balinese farmers and those who still hold on traditions, they know that it is better to protect the environment. It's quite hard [for IDEP] to work with rice farmers because they work at a massive scale. And they work with subaks [the Balinese community organisations for irrigation], governments and stuff. So, they are used to growing rice with GMOs [genetically modified organisms], fertilisers and pesticides. It's hard for them to stop that.

Asking Petra about the same issues, she began by talking about the ways in which sustainable agriculture had started to make inroads in Bali. At this point in the interview, Doni joined the discussion, reiterating some of the points made in his own interview. Commercial farmers are hard to shift because they worry about doing something that might not pay off. Petra continued:

> In a way they're right. If you want to be a farmer as your livelihood, like if that's how you're paying the bills and keeping your kids in school and that sort of stuff, you need a commodity crop that you can sell someone who's going to buy it on a regular basis, you know what I mean. Farming is complicated. It's something that's really quite a challenge, you have to plan well in advance, you have all sorts of external factors that influence your plan, market access is quite difficult for most people, all of that sort of stuff, and people who can teach how to have

> permaculture type crop production are quite rare. So yeah, I have yet to see something that makes sense to me on that level.

She went on to relate this to political decisions made by the Indonesian government:

> I guess the big issue is all the stuff around subsidisation of chemical inputs. So, with the subsidisation that happens in Indonesia to push all of these chemical inputs, quote unquote chemical farming is cheaper than organic farming. But as soon as you remove the subsidisations, because the cost of labour is quite low here, the whole situation changes.

What can this discussion tell us about the way permaculture hybrids operate? Here, what we see to begin with is a problem of economic security for the poor (the high cost of inputs, indebtedness and land forfeiture) along with an environmental problem (high use of synthetic pesticides and fertilisers, problems with sustainability, farmer health and biodiversity). The founders of IDEP identify this problem but in the end the pressures of the market make it difficult to move forward on this issue in the way that they had originally conceived. Commercial rice farmers find it hard to adopt organic methods when it is cheaper to continue with *subsidised* fertilisers and pesticides. In turn, the subsidies are an effect of the enormous market power of big global chemical companies. They can buy the support of the Indonesian oligarchy and enable

their products to gain a market advantage through state funding.

To deal with this context, the hybrid organisation moves sideways to make headway where market pressures do not operate so severely. First, with expat communities and middle-class home gardeners across Indonesia who are starting to develop an environmental consciousness. This leads to market opportunities, especially in the Balinese tourist industry. Second, with communities hit by disaster across the archipelago who want to restore food production for local subsistence and can make use of permaculture technologies to expedite this. Finally, with marginalised communities on the edge of forests who are growing some vegetable and tree crops commercially, as well as growing some food for home subsistence. Permaculture designs and organic methods offer a cheaper means of sustaining their commercial production and an increase in nutrition through a diversity of food crops for home consumption. These contexts also provide an opportunity for international donor funding. This all makes good sense. Yet the elephant in the room is the challenge of making significant inroads into the main food producing commercial agriculture of Indonesia.

RIGHT LIVELIHOODS AND MONEY WORRIES

The discussion above gives a detailed account of how hybrids can work and also reveals some of the difficulties encountered by hybrid organisations in the context of the market economy. The following vignettes are quick summaries of interview accounts. While the activists have

been committed to making permaculture work on the ground, their accounts reveal some of the difficulties of working against the grain of a capitalist market economy. I will use pseudonyms for some accounts.

Margaret from the USA was married to a man with a professional job. Her own paid work was mostly teaching permaculture, either her own courses or casually in university positions. The couple decided to buy into a share in an ecovillage that was being set up near Algonquin park nearby to Toronto in Canada. They lived there for 15 years. She was very disillusioned by what took place. She had always envisaged a group of like-minded environmentalists working together to set up permaculture systems on their large rural property. Instead, only two couples managed to get agricultural businesses going and these were on small privately owned parcels of land. The others took mainstream jobs, commuting to work in Toronto. They had spent considerable sums buying into the ecovillage and consequently had mortgages to pay off.

She was particularly disappointed by the way in which a new division of the ecovillage was planned. Meetings of the ecovillage committee listened to her advice and hired two well-known permaculture consultants to come to talk about how to set up the division. To her horror, their advice was ignored when the committee hired a commercial planner to draw up the plan. 'Part of it I think is also just plain capitalism, honestly. You know, the model that they were going with was developing 30 houses at a time.' They wanted to hire a planner with experience in large-scale subdivisions, given that millions of dollars were involved. The effect was various type one errors from a

permaculture perspective. For example, the garden area for vegetables was situated up slope from the houses, preventing roof runoff from being collected and fed by gravity to the vegetable patch. This was done to enhance the view from the houses. There was no money put aside to establish a perimeter fence to keep deer out of the food gardens. Despite all this, she was pleased that the ecovillage was a site for some examples of sustainable house design. Following her separation from her husband, Margaret had to consider her own income situation. She discovered that when preparation time and childcare payments had been taken into account, her permaculture teaching was not paying more than $3 an hour. She undertook training in business and has now set up a web consultancy for ethical business entrepreneurs. This has yet to make her an adequate income.

Penelope and her husband bought a share in a sustainable ecovillage being established in Scotland. From her perspective the community was dominated by the man who became the spokesperson. This man and his allies pressured other members to move to set up commercial agricultural projects on their individual smallholdings. In this, he argued that he was acting in accord with the planning permission given to the property as a sustainable rural experiment. For the first five years, households submitted quantitative reports of their earnings from these businesses and the monetary value of goods in kind produced for their own use. According to Penelope, these attempted commercial enterprises ended up taking priority over more pressing needs, causing much stress. From the perspective of the dominant clique in the eco-

village, they would prove the viability of a degrowth sustainable lifestyle by engaging in profitable agricultural businesses. Relationships within the community became 'toxic'. In the sixth year, half of the households refused to submit these quantitative financial reports and instead prepared a qualitative report on their livelihood strategy.

On the land set aside for her family, Penelope and her partner established their own permaculture business as a couple teaching sustainable agriculture and settlement design. She set up food gardens and soft fruit production to feed their students. Penelope estimates her partner was working a 16-hour day every day of the year. Her own work, with childcare, teaching, gardening and cooking, must have been similar. They were able to make sufficient money, and produce goods in kind, to fit the guidelines on a commercially sustainable business. Despite this, they were not making a lot of money. For example, their basic income was £5,000 per year from their teaching. By the time their children were teenagers this caused them some stress. There was barely sufficient money for things like school outings, iPhones and car repair. The partner was supplementing their teaching work by maintaining the hydro electrical system for the ecovillage. In the end their house, that had taken years to build, caught fire and burned to the ground. When she rang her partner to tell him, his first words were 'We're free'. They are selling their share in the ecovillage.

Natalie explained the limits on CSAs in Norway. CSAs are supported through the European Union (EU) sustainable agriculture subsidies. The EU subsidy typically pays the rent that the farmer gets for renting out part of their

land for vegetable production to a CSA. Given this, it is no surprise that the CSA sector of food provision is slowly growing in Norway. Despite this, most Norwegians are not joining CSAs and still buy vegetables and fruit from the supermarket. Natalie's CSA could readily expand to grow more vegetables but they are unable to recruit more members. As she explained, this is partly because of the convenience of shopping at the supermarket and the range of vegetables and fruit obtainable there. It is also related to a peculiarity of the CSA system in Norway. Members have to sign up to provide labour on the CSA and to come to the CSA to harvest their own vegetables. This labour requirement is a disincentive for most people, who have a harried life doing their paid work. In addition, farm labour in Norway is very low paid, meaning that to compete on price, a CSA has to charge low prices for vegetables and fruit. The annual charge for a member (for as many vegetables as they want to gather) is about AU$400. While the staff of Natalie's CSA work for higher wages per hour than award rates, it is still a low amount compared to other jobs. Natalie and other staff work off-farm jobs to supplement their income from their farm work.

Loretta had intended after her permaculture training to set up in business in permaculture. She gave classes to adults in permaculture but found it difficult to make a living.

> The conclusion that I came to after giving it a go for a while and trying to find a way to live a completely integrated permaculture life was that it really wasn't possible

> and sustainable, so I decided to go into regular teaching, and I got my teaching certification to teach children.

She tried to set up a community garden on permaculture principles in a local church grounds. The church initially seemed enthusiastic but removed her garden when some members of her garden group started to camp overnight at the site. The church protected their private ownership of the property and she could not contest this, even though the land was not being used by the church for any other purpose. Disillusioned by meetings of the broader permaculture community she decided to set up a group for women in successful permaculture businesses. According to her account, she was unable to find any women in the USA with successful permaculture businesses.

Julie from Australia bought a small rural property after she finished her permaculture training. She has spent a lot of time designing the property as a permaculture farm and leisure resort. However, it has been difficult to implement her plans. As she says, in periods when she has had full-time work, she has sufficient money to make changes to the property but does not have sufficient time to do anything there. In periods when she has not had full-time work, she has had no money to do anything. It has been difficult to make the move from full-time urban employment to a rural commercial enterprise, even though she has managed to take the first step. She is under-capitalised to set up a rural farm business. She hopes to be able to do more after taking an early retirement and living on her superannuation.

Lachlan runs a permaculture landscaping business in Newcastle, Australia. He is in his early thirties and has had this business for nine years. He is happy to be doing this work but acknowledges that he is earning less than he could be earning using his science degree in some more commercial field. He is renting and sharing his house. He could not buy a house, even though prices in Newcastle are less than in major cities. As well as his landscape business he is teaching the PDC. He tries to make the charges fit with a rate for him of $60 per hour (a low rate compared to landscaping). But when the time taken in preparation and in organising the group is taken into account, it works out at less.

> Like if you're going into permaculture to make a big buck I mean (laughs) I don't know anyone who's done that. Is that a thing? Like you go to the stock market for that, right?

He believes that some celebrities of permaculture are making more out of their teaching. But they are doing this by charging a price for their courses that is prohibitive for most people.

Kate bought her property on the edge of Maitland, a small rural town. This was about 20 years ago. Doing this, Kate and Mark were able to run their CSA business with customers located in the town. They were selling weekly vegetable boxes (with eggs) for $25 per box. In other words, at rock bottom prices compared to supermarket prices for organic food. Since then, real estate development has moved out to occupy this fringe and council

rates have gone up accordingly. The prices for rural land on the periphery of Maitland have become unaffordable.

> I actually got an inheritance from my dad. So, we were able to pay it off. I think that in our times now, for somebody young, to try and make a living from a permaculture farm is going to be quite difficult because they've got the cost of the land and they've got to pay it back.

Mark and Kate have no succession plan, their own children do not want to follow them into this business. They believe that permaculture people should join together to form land buying cooperatives so that the next generation have a chance to start up local alternatives to agribusiness. This has not yet happened.

PREFIGURING AND HYBRIDS

It is misleading to suggest, as Mollison does, that a decision to commit to an ethical 'placement of money and resources, and … the determination to act in accordance with one's beliefs' is all that is required to establish a successful right livelihood.[23] It is actually quite difficult to establish a permaculture business. It is no accident that most farming business is unsustainable in one way or another. These environment killing expedients are designed to cut costs of production, increase profits, reduce prices for the consumer, and provide convenience and special treats for people whose daily experience of work is alienating. The means of production in farming

are owned by those who continue these practices and have already been advantaged through their ownership of large holdings. It is hard to compete against such operations. For the few who do, it implies longer hours of work and less income than may be achieved in careers demanding a similar level of expertise.

As far as teaching is concerned, the PDC is not a university degree and does not confer the same leverage in the job market. It is not surprising that it is picked up as a hobby addition by most students taking it – and priced accordingly. What are sometimes seen as exorbitant prices for the PDC barely create an income for even very successful teachers. Those who are doing reasonably well out of a permaculture business are in the male dominated trades such as landscaping and building – trades that pay well per hour and require a minimal input of capital investment to get started – but also entail risks of injury, the inevitability of unemployment in an economic slump and the necessity for early retirement.

What we can see in all of this is the intersection of two social forces. One is the negative sanctions that the market imposes on economic units that go against market logic to pursue sustainability and social justice ethics. The second is the discretionary income of the middle class, allowing at least some of these activists to maintain these hybrids and deal with the inevitable stresses. In a pattern typical of social movements, participants enter this difficult space for a time but do not necessarily maintain their hybrid practice for their whole life course. Although this section of the chapter has concentrated on the negative impact of market forces, these hybrid experiences are not usually

interpreted as a mistake, or as stiff upper lip self-sacrifice. They have allowed a creative engagement with the problems of the world, a career that followed ethical principles and the adventure of meeting these challenges.

Rather than seeing prefiguring institutions as fully realised examples of economic forms that will become dominant in post-capitalism, the analysis provided so far treats them as compromises with the market economy that make sense now. Doing this, we can understand how these institutions both fit in the market economy and also undermine it.

All hybrids reduce the power of the market to determine production and distribution outcomes. Rather than selling dear and buying cheap, they organise their market activities to achieve specific ethical purposes, to benefit producers, consumers and the natural world – even when such decisions go against market good sense. Prefiguring institutions like this can link up to insulate their organisations from market pressures. For example, when permaculture teachers from Australia came to Bali to *donate* their services to IDEP rather than charging the full Australian price for tuition. These prefiguring hybrid organisations also link their activities to non-monetary alternatives. For example, donations from an NGO in Germany were used to support non-market agriculture in Zimbabwe.

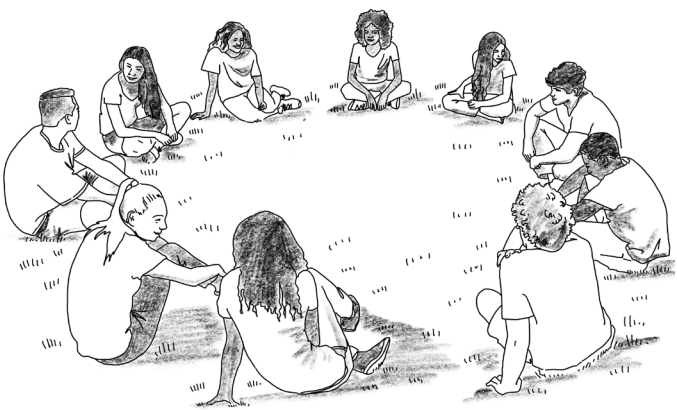
If a sufficient number of organisations were ignoring market incentives in the way described in this chapter, money could become largely irrelevant as people's needs would be met through a chain of gifts produced within hybrid organisations. With such an outcome these hybrid

organisations could become producer collectives supplying to other producer collectives and to the community. For example, the raw materials to construct garden beds and irrigation systems for a CSA in the UK might be supplied by allied worker cooperatives free of charge, while those worker cooperatives were themselves supplied by gifts from other cooperatives supplying *their* basic needs along with the requirements for *their* production.

What this chapter also illustrates is the difficulties that hybrid organisations have in escaping the constraints of the market. A dramatic illustration is the difficulty of establishing workers' cooperative farms in the UK when almost all land is owned by an aristocratic and capitalist elite. These problems are not reasons to despair of a hybrid prefiguring strategy. But they do suggest that an effective post-capitalist transition will ultimately have to go further. One requirement is the acknowledgement that the market and money must be abandoned and a willingness to go down that path. The second arises from the reality that the major part of the world's 'means of production' is currently owned by an elite. These means of production must be taken over by the community.

CHAPTER FIVE

Gender and Colonialism



If permaculture aims to 'care for people' it must challenge gendered, colonial and racial inequalities. Also, permaculture aims at system change and must mobilise as many people as possible – unlikely if permaculture perpetuates gender, colonialist and racial inequality.

GENDER AND PERMACULTURE

It has been a common observation that the 'back to the land' counterculture can be attractive to men who see themselves as rugged pioneers taming the natural world to build a rural paradise. 'Homesteading' – building a

house, fencing, establishing a garden – can reinforce traditional divisions of labour. While women do the cooking, childcare, shopping and housework their partners do the high prestige work building the homestead – aka real men's work. This unequal division is amplified if the man also acts as the public face for the couple, teaching and promoting permaculture. Within the back to the land counterculture, this gendered pattern is called into question by lesbian and gay couples and collectives, by single women, establishing *themselves* as the homesteaders and by heterosexual couples that divide tasks more evenly. All these options are present in permaculture, which reflects the gender politics of environmentalism as a whole.

There is an incident in Mollison's *Global Gardener* (1991) series that surely grates on anyone concerned with gender politics. Mollison takes the viewer on a tour of his food forest. The initial shots show him establishing his food forest with newspaper mulch. He then lies down and declares: 'And this is where the designer turns into the recliner. You can rest in your garden. If you have it already well planted, you can pretend to be working in the garden and be invisible from the house.' The next shot shows the food forest after two years. By now some plants are more than 2 metres in height. 'Now, only two years later I am invisible from the house.'[1] This is the cliché of 'her indoors', nagging Mollison to do housework. He escapes outside to do *real men's work*. The *Global Gardener* series is a founding text of permaculture.

Mollison's attempt to tighten the credentialling system for the PDC can be considered as an instance of gendered

power (see chapter 3). Mollison was most concerned with teachers who were introducing elements of 'spirituality' into their teaching – 'woo woos' as he described them. By contrast, he wanted to defend permaculture as 'scientific'. This binary of rational science and irrational superstition is a trope of gender. Those targeted were mostly women who had been early students of Mollison. By the late 1990s they had become senior players in the Australian movement.

Gender politics in permaculture has been an issue for some. Naima was wary of the permaculture movement because of this. In Northern NSW she attended a festival where a talk was being given by Bill Mollison. She and her friends were enthusiastic about permaculture before they went but were dismayed to find Mollison quite sexist – making jokes that included the men and disparaged the women in the audience. A second incident took place when she bought a small farm that had been owned by a permaculture enthusiast. She discovered that the previous owner had planted parts of her farm with a weedy legume tree (*Schizolobium*). She was surprised when she got a phone call from a permaculture designer. He wanted to come to her property and collect seeds so he could establish these potentially invasive trees on other farms in the region. When she objected to this plan, he was dismissive, angry and patronising. He claimed that in the context of climate change any plant that would grow quickly was a plus. She found his behaviour patriarchal.

Naima was not the only permaculturist I spoke with who raised such issues. Loretta dropped her involvement in the building of the North American peak permacul-

ture body because planning meetings proved inconclusive due to the men involved. They were most concerned to 'showboat', to compete with each other to establish dominance. Karryn found that men were more likely to be listened to as teachers of permaculture. She co-taught some PDCs with men.

> I'd prepare more, I'd be there more so that people weren't thinking I'm just going home to my family. Inevitably my male colleagues would get at the end of the day, comments about how great their teaching was and I would get, like even if I taught the most technical stuff and knocked it out of the park, I would get comments like, she's such a good mum. And I talked to a ton of women, who were like, that's the exact same thing. One woman was the head of her own business doing permaculture design consulting and people talked to her like she was the secretary.

Both Loretta and Karryn believed that it was extremely difficult for women to start a permaculture business in the USA.

Gender and permaculture in public debate

Gender issues have become a topic in the public networking of the permaculture movement. In the 'Decolonizing Permaculture' issue of *Permaculture Design Magazine* (2015), Adam Brock argues that the charisma of the two male founders of permaculture has set up a patriarchal psychological profile for the movement.[2] Their example becomes a model for permaculture's male leadership.

Heather Jo Flores is the initiator of the 'Women's Permaculture Guild' to 'build personal and professional connections between women who teach, practice, write about, and live on the permaculture path'.[3] The guild offers a one-year free permaculture course and a PDC online. They have more than 20 women teachers, and students can select mentors. Other women contributors to their course are also featured on their site. There are pictures of these leading women teachers with short biographies. Their Facebook site has more than 20,000 members. A guide is provided on the site to more than 20 best permaculture books written by women. Introducing this guide, Flores writes:

> Women have a high rate of participation throughout permaculture but aren't proportionally represented in leadership roles. The spotlight often goes towards men while women who are organizing and farming get overlooked.

These viewpoints are echoed in other writing for the permaculture community. For example, Trina Moyles in *Briarpatch* points out that a Google image search for permaculture instructors brings up 50 per cent more white men than women, Indigenous or people of colour.[4]

Patriarchy as contested in permaculture

My view is that patriarchy is *contested* within permaculture, rather than simply *dominant*. The roots of permaculture are in sustainable agriculture, traditional

knowledge, environmentalism, systems theory and social justice. These are 'gender blind' rather than patriarchal. The permaculture movement has the concept of 'care' as a central part of its ethics – care for the planet and people. In mainstream culture the term is typically given a feminine connotation and associated with women's emotional work. In permaculture this concept is taken up as an appropriate injunction whatever your gender.[5] Permaculture includes many women with important public roles in the movement. Rosemary Morrow's books may not be understood by most permaculture activists as permaculture *canon*, but they are certainly key texts. Mollison's attempt to exclude a group of women leaders from the movement was an embarrassing failure. In reaction to patriarchy in permaculture, women have set up their own organisations within the movement, sidestepping trouble and strengthening their hand.[6] None of this means that patriarchy has ceased to be a problem in permaculture, but it shows how feminist currents are working *within* the movement to enhance women's positions.

DECOLONISING PERMACULTURE

Issues of race, colonialism and global oppression of the majority world are a concern in the permaculture movement today. For example, Joel Salatin (USA), a leading figure in regenerative agriculture, became the focus of discussion recently. While Salatin has never identified as a permaculturist, his writings have been well received by many in the permaculture movement. He made a gratuitous and racist attack on a Black agricultural activist who

has questioned the model of the small family farm as the way forward. Permaculture leaders in Australia and the USA condemned Salatin's racism in Facebook posts and opinion pieces.[7]

Most permaculturists I spoke with from rich countries appeared to be white and middle class. This reflects the permaculture movement in the rich countries. What was not typical of the middle class was the extent of their participation in grassroots assistance in developing countries – for example, Karryn (India), Dave (many countries of the Global South), Alice (Palestine), Mim and Damien (Venezuela, East Timor and the Solomons), Natalie (Central Asia). Dave was also working with permaculture to address racial issues in Britain. His education and development NGO had initiated an Islamic permaculture community garden in the centre of Reading. The aim was to publicise the community work of Islamic youth in Reading and to remind the local community of the everyday use of foods domesticated in Islamic countries. Damien had worked with Indigenous remote communities in Australia as part of a health support initiative.

The topic of race and global inequality was raised by a number of permaculturists with whom I spoke. Naima was uncomfortable with the very idea that permaculture has been *invented* by two cis white men. This 'seems deeply colonialist'. Analogous to the idea that Captain Cook *discovered* Australia. At the most, permaculture has been synthesised from Indigenous agricultural knowledge by Mollison and Holmgren in the second half of the twentieth century. She felt that this colonial attitude extended to some permaculture activists. The man who

wanted to plant *Schizolobium* everywhere was ignoring the history of this land prior to colonisation. His plan was to cover the landscape with a plant from another continent without even discussing this with the Indigenous traditional owners.

Natalie compared permaculture unfavourably with agroecology.

> Permaculture doesn't take into account indigenous and non-white voices. It still comes from a bit of a place of white privilege. I like agroecology's approach – amplifying women's voices, amplifying indigenous voices, and that emphasis on solidarity.

She was critical of the (white) permaculture community in Alice Springs for concentrating on their own permaculture gardens and sustainable lifestyles – while they played no part in working with the deeply disadvantaged Aboriginal community.

Karryn thought it was important to acknowledge the critique coming from the decolonising movement in the USA.

> And here, we're having a real backlash against permaculture from folks in the decolonizing movement. They say that permaculture appropriated indigenous knowledge. And didn't give credit. I actually think it's a really good point. I'm like, yeah, let's talk about that. I think maybe, sure, some things weren't credited appropriately. So that's a problem. I don't think back then we understood about cultural appropriation, like we do now.

She looked forward to working with the decolonising movement to develop permaculture as a joint project. She referred to this as 'calling it in' rather than 'calling it out'. She believed that an ideal permaculture society would offer reparations to Native Americans and Blacks.

Decolonising permaculture in the public discussion

These issues have become a focus of discussion and action. The 98th issue of the US-based *Permaculture Design Magazine* (2015) is devoted to 'Decolonizing Permaculture'.[8] A number of websites and organisations promote Indigenous or Black permaculture.[9] For example, a 2019 convergence on the Pine Ridge Reservation. The theme was Indigenous wisdom and permaculture skills. Participants were assisting the Oglala Lakota Cultural and Economic Revitalization Initiative to address issues of 'food scarcity, poverty, and lack of adequate housing'.[10]

Three main issues are addressed in the discussion in the movement.

1. The failure to acknowledge Indigenous knowledge as the basis of permaculture.
2. The domination of the movement by white people. The failure to be inclusive.
3. Settler ownership and Indigenous land.

The founding of permaculture and the accreditation of Indigenous knowledge

Kirtrina Baxter writes from the perspective of a Black woman. Permaculture 'draws from these living and

ancestral sources of indigenous knowledge and hordes it as its own – the cultural expression of it, changed; the ancient nature of it, re-claimed; the practices boxed up and sold off as an invention of white male privilege'.[11] The 'People of Color Caucus' from the 2014 North America convergence adds, more specifically, that 'Bill Mollison and David Holmgren, the "inventors" of permaculture, codified knowledge drawn largely from observing and learning directly from Aboriginal and indigenous peoples.'[12]

My view is that Mollison and Holmgren invented the *term* 'permaculture' and at least publicised *their version* of sustainable agriculture with that term. As for the technologies, the founders often talk about our good fortune in having access to a repertoire of useful plant and animal species first domesticated by people from a variety of cultures. In the early permaculture canon, the authors rarely relate *specific* plants and technologies to their original sources. For example, we do not hear that composting was a technology invented in ancient China, brought to Europe by Albert Howard and Franklin King, and popularised by Jerome Rodale, one of the originators of 'organic agriculture' in the West.[13] We do not learn that growing maize with velvet beans was a technology pioneered by the Kekchi Indigenous people of Guatemala and Honduras and later taken up by scientific agriculture.[14]

While such detail is usually missing, there are some acknowledgements. For example, Mollison writes: 'Classical wet rice and taro terrace has water continuously led into the top terrace of the series.'[15] The term 'classical' implies that this design is an ancient agricultural strategy of Asian and Pacific societies. And later in the same chapter:

> In Taiwan and in the Philippines, small intensively planted home gardens are planned to feed a family of five all year. I have added to these designs my own permaculture 'least-path' layouts … The whole design owes much to the work of the East-West Institute in Hawaii, and the Samaka gardens of the Philippines, but the layout is purely permaculture.[16]

Here, Mollison suggests that these garden formats are traditional and have been recently revived by local agricultural NGOs. Mollison has added ideas about permaculture layout.

Agricultural science is presented in the canon as explaining and assembling Indigenous and more recent technologies. Whether this is 'colonialist' is hard to say. Certainly, ecofeminists such as Carolyn Merchant and Vandana Shiva have explained how mechanistic and reductionist forms of science support patriarchal and colonial domination. But both are scientists. Merchant has explored how ecological science complements feminism and speaks in complimentary terms of permaculture as an example of 'action-oriented disciplines … rooted in ecology'.[17] Similarly, Shiva's doctorate drew on the interdependence and holism of quantum theory.[18]

Permaculture is hard to imagine without referring to certain scientific knowledge, even though it draws on the agricultural knowledge of pre-colonial societies. For example, discussion of grains in a permaculture class would always include the technology of intercropping with 'legumes'. The concept of legumes is derived from botanical science. To help students understand the

topic, the teacher might go on to talk about how legumes fix nitrogen from the air, about root nodules, the role of rhizobia and such like. These are ideas from science which assemble traditional knowledges in a new synthesis – for example, the use of *Faidherbia albida* trees in cropping fields in the Sahel, the use of *Mucuna pruriens* in maize fields by the Kekchi, and the use of climbing beans by Native Americans in guilds with maize and squash.

Holmgren's later writings suggest a more developed relation to these issues than the earlier canon. An essay from 1991 considers the pre-colonial Aboriginal management of fire in Australia – how their techniques worked in detail and how soil fertility was retained through a system of patch burning.[19] These ideas are followed up in *Principles and Pathways* (2002).[20] Holmgren does not suggest these technologies as timeless wisdom to be implemented again in the present, as they were in the past. Instead, they are valued as examples of people working out how to live sustainably with nature in a particular context.

My perspective is informed by a variety of anthropological and archaeological studies. I see the people now termed 'Indigenous' as living in stateless and classless societies in pre-colonial times. In terms of production, some of these people were foragers, some horticulturalists and some pastoralists. Though such societies undoubtedly altered and managed the natural environment, they had nevertheless evolved a sustainable ecologically informed economy. Their religious world views reflected this. Class societies have been based on cereal agriculture and the storable surplus that goes with that. These societies have had a tendency to destroy their environment.[21] They can

treat nature as an enemy to be tamed. A common outcome is collapse. There are many examples, ancient Mesopotamia, the Mayans, the Roman Empire, the Anasazi.[22] But not all class societies ended up in such dire straits. Some, such as the Asian rice-based irrigation states, maintained a sustainable agriculture for thousands of years. Permaculture is an attempt to revive the values, principles and appreciation of the natural world that is typical of stateless societies (Indigenous societies). In terms of technologies, it draws on discoveries from both stateless and class societies.

The failure to be inclusive

If in the rich countries, participants in the permaculture movement are mostly white and middle class, in the developing countries, permaculture has been quite successful with rural grassroots projects. Discussion mostly concentrates on the situation in the rich countries. Kirtrina Baxter, a Black woman from Philadelphia, is perplexed by the scarcity of people of colour in permaculture, asking 'How is it that these permaculture principles speak to me, yet the movement does not?'[23] Anandi Premlall, from a South Asian background, notes that the leadership of the movement 'doesn't look like us or speak effectively to our needs as people of color'. She asks why more of the Indian community are not involved in permaculture in New York: 'What is missing in the permaculture conversation that more of my family, friends, neighbors, and community in Queens aren't as enthusiastic as I am about this? What needs to shift in permaculture?'[24]

A working group at the 2014 USA conference developed an action plan for a more inclusive permaculture with a list of advice. Insist on anti-oppression training sessions for permaculture convergences. Seek understanding about permaculture ideas that have their origin in Indigenous cultures and give proper credit. Facilitate separate social spaces in permaculture gatherings so people with a shared background can get together. Acknowledge when permaculture events are taking place on land stolen from Indigenous people. Seek invitations from Indigenous representatives. Give scholarships or reduce fees for people from Black or Indigenous backgrounds.[25]

Heather Jo Flores, in her contribution to the 'Decolonizing Permaculture' issue of *Permaculture Design Magazine*, relates these issues to social class. 'For me, the central problem that divides the permaculture community is class. It seems to me that the unequal distribution of wealth and opportunity, while often connected to the other isms, is at the core of many of the bad (poorly designed) dynamics in our community.' She talks about her own experience as a child of a single mother of French and Cree background – the struggle she has had to become educated, her student loan debts, the difficulty of pursuing a permaculture career without financial backing to start with.

Indigenous people and racially marginalised minorities are almost always *poor* relative to typical members of the permaculture movement in the rich countries. Many of the dynamics that exclude people of colour from permaculture are the same dynamics that exclude the white working class. Strategies premised on the purchase of agricultural land, the development of right consumerism

and backyard farming are most accessible to the middle class. These have been the hallmark strategies of permaculture in the rich countries. Yet oppressed minorities are unlikely to see these strategies as an option for their communities. To break out of this box permaculture needs to expand on strategies which overcome these constraints. The following is a list of the kinds of actions already taken by the movement that could be strengthened.

1. For urban areas, permaculture activists may work at establishing community gardens. This can enable access to land for those who are not homeowners. By promoting a community garden as a nutrition programme, activists legitimise projects to take over unused land. The activists involved should be from marginal communities or be people able to work well in that context. In the interviews for this book, Dave, Lachlan and Andy talked about examples of this strategy.
2. Permaculture has a history of working on grassroots strategies to improve food security and nutritional diversity in developing countries.[26] Teaming up with local people is a priority, helping them with what they perceive as problems rather than coming in with a worked-out agenda. Contributing money to such projects is a strategy for those who are not involved more directly. Development outreach – working with and learning from Indigenous people – is also an appropriate strategy in many settler nations contexts.
3. Using a surplus to support marginal communities in the rich countries. For example, scholarships and financial

assistance for permaculture training. Natalie's CSA supplies vegetables with a payment system adjusted to financial situation. Starhawk gives scholarships on a pay what you can basis to people of colour and aims at more than a third of people of colour in her courses.[27] Holmgren has recently released his latest book *Retro-Suburbia* (2019) free of charge online.[28] More direct gifts to community organisations are also an option.

4. The last strategy is alliance with groups working more directly on these issues than permaculture itself. For example, Indigenous and Black political campaigns. Work on the issues that these communities regard as important.[29] Also, attempts to fundamentally reshape the economic order. A fairer economy would vest ownership of land and other wealth equally – with benefits to marginalised communities.

For me, it seems important that permaculturists are embedded in and engage with other contemporary movements. Effective assistance is impossible without emotional investment. Many in permaculture are more interested in sustainable agriculture than any other political cause. Intersectionality means that individual people are at the intersection of disparate and loosely connected systems of oppression.[30] Often, the most effective political strategies focus on a niche and work that territory effectively. For example, 'Black Lives Matter' or the '#MeToo' movement. On that analogy, the most effective strategy for permaculture could be to concentrate on its core concerns – sustainable agriculture and settlement design. At the same time, it would

be only reasonable to expect that the movement would express its ethics (a) through alliance with working-class, Indigenous and racially marginalised communities and (b) through the participation of these communities in permaculture.

Settler ownership and Indigenous land

Some participants in permaculture are 'landowners'. In settler societies this means that the land that they own (whether residential or rural) was stolen from Indigenous people. In *Permaculture Design Magazine*, the 'Decolonizing Permaculture' issue includes this analysis by Jesse Watson, 'Decolonization is about correcting past crimes committed by (mostly) European settlers by returning "stolen" land. Ideally, this process should be done without strings attached. Questions of what happens to present settler peoples is secondary to the act of returning Native land to Native peoples.'[31]

Heather Jo Flores draws out the implications for permaculture. 'Any person who owns land in a place to which they are not native [is] a "settler" (a.k.a. colonizer). By this definition, just about every landowner in the permaculture community is a settler/colonizer.' She discusses conversations with permaculture people looking to help the oppressed. When she suggests they give their land to her (as a Cree) they are not keen.

> Alas, it doesn't seem as if people who own land will start signing deeds over to sovereign nations anytime soon, and in my most candid moments, I would probably say

> that there's not much point in continuing a discussion about equality until people are willing to do way more than just talk about it. The only way to truly balance the scales is by actually, physically redistributing wealth. Call me a socialist, but isn't socialism at its heart just a community coming together? Fair Shares, anyone?

When I spoke with Karryn on such matters, she recommended reparations to native people and Blacks as part of an ideal permaculture society. Acknowledgement that the land we are using was stolen from Indigenous people is a useful reminder for introductory statements at permaculture convergences. Nevertheless, Flores is probably right in thinking that white permaculture people are unlikely to *give their land* (right here right now) to Indigenous sovereign nations.

Different parts of the permaculture movement may agree to differ on this point. A feigned consensus would not be that helpful in resolving tensions. As a proponent of the gift economy, I believe that land should be owned by the *whole* community – with usage rights vested in particular parties as endorsed by the community. To move to this kind of economy, a revolution would be required. At the present time, a *very* small, very rich minority owns almost all land. Demanding that middle-class permaculture people divest themselves of their small allotments and residential properties to show solidarity with Indigenous struggles at the present time is quixotic.

A very few leftist people are choosing this expression of solidarity, but it is not likely to become mainstream. One reason for reluctance is the following consideration. While

such philanthropic gestures may make changes to the lives of particular individual people, they do little to change the structure of the system as a whole. The capitalist market economy produces an underclass and refuses the lessons of Indigenous knowledge because of its economic structure. The kinds of strategies discussed already in this chapter are more likely to make a difference. Using discretionary middle-class wealth to fund community projects that work with marginalised communities – to develop new strategies for poverty relief, community strength and food security. Such initiatives can point the way to a more total system change, as this book has demonstrated.

Thinking about what we might be able to do following system change, it can be useful to consider land use in a permaculture utopia. Recently I have been looking into the land requirements to supply Melbourne (a capital city in Australia) with food. By reducing the necessity for pasture for large livestock, the people of the city could get *all* their food and their wood supply from 24 per cent of the land in their state of Victoria. The amount required *just for food* at the present time is 72 per cent of Victoria.[32] So, there is a lot of land that would be available for a meaningful postcolonial settlement.

It is important to recognise that differences about land use in settler states are not always about access to agricultural land. They can also be about appropriate treatment of landscape as culturally significant for Indigenous people. The continued failure to acknowledge these issues and give them importance in settler states is stigmatising and shows contempt rather than empathy.

Views from Indonesia and Zimbabwe

When I talked with people in IDEP from Indonesia and CELUCT members from Zimbabwe, it was interesting to see how they framed the relationship between permaculture and traditional knowledge systems. In both cases, some of the people I spoke to were white immigrants from rich countries, but the majority were local people.

Indonesia has a constitution in which all monotheistic religions are acknowledged as valid. IDEP is working with people who may be Islamic, Hindu or Christian. An underlying subtext is often a more ancient Indigenous spirituality. All three I spoke with from IDEP praised permaculture for its ability to adapt to the local social context. Working on a project, they would remind the local people that permaculture concepts fitted with their religious ethics and pay attention to sustainable practices from the local culture. For example, in Nusa Tenggara, IDEP encouraged local people to plant Moringa (*kelor*) trees. In Sasak tradition, these trees ward off evil spirits. IDEP prized kelor as a vegetable rich in vitamin A and a tree with roots that fix nitrogen. IDEP staff noted the ways that traditional sustainability was threatened by globalising development. An international timber company aimed to cut a forest that had a role in traditional ritual practice. An emphasis on marketable cash crops and chemical inputs threatened subsistence household food provision. Ruthless commercial competition undermined village solidarity. The economic power of global food companies drove rice farmers to use synthetic inputs and abandon traditional

varieties. Malnutrition was the consequence when home-grown vegetables gave way to purchased snacks.

The people of the Chikukwa clan were divided in their approach to religion. Some wanted to maintain aspects of traditional religion while some were 'strong' Christians, who opposed Indigenous traditions. CELUCT as an organisation aimed to mediate these disputes and foster a harmonious cooperation. The people who were maintaining some traditional rituals praised permaculture for its emphasis on a sustainable relationship with the natural world. For example, excessive clearing of the hillsides had led to massive soil erosion, silting up the gullies. CELUCT organised voluntary parties of villagers to construct swales on the hillsides, plant trees on the ridges and fence off these gullies from livestock – encouraging indigenous tree species. Three leaders of the local Indigenous spirituality group praised permaculture. In their traditional religion it was forbidden to cut down certain trees, which housed ancestral spirits. It was forbidden to allow cattle and goats to range freely, destroying gardens and woodlands. These traditional religionists supported the restoration of the gullies – protecting their sacred places. Strong Christians had a different set of reasons for supporting the project. They liked the way it had given men an impetus to agricultural work, fulfilling their family duties by providing food. They praised the work ethic of permaculture. Household food provision could give men something to be proud of when they could no longer get paid work.

Given the fact that local people in these villages still remembered their ancient ceremonies, why did they need permaculture instruction from outsiders? Why not

just go back to sustainable Indigenous technologies? To some extent, this is exactly what CELUCT inspired. Traditional vegetables were revived for their vitamins and fibre, for their resilience in dry years, for storage through the dry season. Nevertheless, restarting Indigenous agricultural technologies was not an option on the large scale. Traditional African agriculture had depended on shifting cultivation. Villages were moved about every 20 years. As soil fertility declined in one place, people would return to a site where a previous village had built up fertility with belts of trees, with animal and human manure and with food wastes.[33] This shifting cultivation was no longer an option for the people of the Chikukwa clan. They had been deprived of the larger part of the land on which they traditionally lived, being excluded by government owned forests, by a national border and a national park.

The crops and technologies that the Chikukwa clan now used were those that had been imposed by colonial governments – maize (not an indigenous cereal), with the fields hoed and cleared of weeds and with cattle allowed to graze the stover. The result was soil erosion and ever diminishing soil fertility. These colonial techniques had to a very large extent become 'traditional'! Earlier technologies were (a) unknown and (b) impossible without shifting cultivation. The mainstream solution was always the same – fertilisers, pesticides and hybrid seeds. But these technologies were unaffordable. With household food provision, there is no crop to sell and no money for inputs. Solutions from permaculture were urgently needed and readily taken up, as their efficacy became obvious.

These examples from Indonesia and Zimbabwe suggest the complexity of these issues. The way to connect Indigenous and traditional knowledge systems, sustainable agriculture and effective project design is locally specific. One formula does not fit all.

Conclusion: Permaculture Politics

This book is essentially about the politics of permaculture, the strategies used by permaculture activists to challenge 'industrial' society as an economic and political formation. We have seen the ways permaculture people imagine a social, economic and political order that would reflect permaculture ideals and analysis. Looking at permaculture from the inside, we have considered how the movement is responding to charges of patriarchal gender politics and colonialism. So far, I have pulled back from an extensive expression of my own views in order to accurately describe the movement. In this final chapter, I change tack. I hope that readers from within the permaculture movement will find these ideas helpful, if only to situate their own views more clearly.

Perspectives on permaculture

Simplifying for the sake of clarity, chapter 2 offered three versions of permaculture, in chronological order.

1. Permaculture is a system of sustainable agriculture emphasising perennials.

2. Permaculture is sustainable agriculture and settlement design informed by three permaculture ethics – care for the earth/care for people/fair shares.
3. Permaculture is the use of systems theory and design principles as a framework for a sustainable society.

The overwhelming emphasis of those I spoke with was on the third and most recent definition of permaculture – as a design science for sustainability. However, it is very apparent that many permaculture careers were very strongly tied to sustainable agriculture, in one setting or another. This emphasis on agriculture is also very evident in the detailed content of the permaculture canon writings, whatever their framing definitions.

There is a mismatch between permaculture as defined – as if it were the whole of environmentalism – and permaculture as practised – a particular approach to agriculture. This gap is one of the reasons that some I engaged with struggled to come up with a satisfactory definition of permaculture. Newcomers to permaculture find the stated definitions of permaculture difficult to grasp. The principles meant to inform a design science based on systems theory are slogans, not that far from common sense. As they are rolled out, they are attached to a vast variety of random examples. What is the hidden curriculum that enables a novice to know whether *their* use of a principle is apt? Exactly where is this science of systems theory? It is supposed to be foundational but is never explained – except in particular agricultural examples and folksy bon mots. Graduates of the PDC can feel a sense of triumph

in having mastered this tricky terrain but less sure about concrete agricultural strategies.

From the perspective of pedagogy, of training and of learning, I regard this as a problem. I like education that is a square deal – you get what you have been promised. Mysterious, arcane and confusing instruction might not faze some, but the concept of permaculture should be transparent and accessible, available to the widest possible range of people.

So, here are my suggestions. Permaculture teaches the design and maintenance of sustainable agriculture. In addition, permaculture teaches the basics of passive solar design for residential building. Permaculture is, accordingly, a part of a broader environmentalist movement that as a whole aims to move to a sustainable future. Permaculture ethics inform our approach to sustainability. Care for the earth, care for people, fair shares. So, permaculture is about sustainability achieved through looking after all living species and all people.

The context of the permaculture approach is a particular view of the environmental crisis. Energy descent means that we have to move to a local agriculture and energy supply. Permaculture emphasises perennials as a key part of sustainable agriculture. Permaculture favours a decentralisation of political power through networked bioregional grassroots governance – fitting with care of people and the decentralisation required by energy descent.

In terms of teaching the PDC, introductory and concluding topics should be these broad framing ideas of permaculture. For example, defining permaculture, per-

maculture ethics, the implications of energy descent, project design for permaculture interventions ('social permaculture'). The *vast majority of the course* should be on sustainable agriculture. It should aim to fill in gaps in knowledge depending on the student audience. This could get as basic as how to plant a tree and grow vegetables. Some topics might be zone and sector analysis, perennials and annuals, water harvesting, soil fertility (minerals, pH, legumes, manure, human sewerage, compost), cereals, tree crops, vegetables, seed saving, aquaculture, small livestock, farm and garden plans. A small part of the course would be on passive solar design.

Underlying these suggestions is this thought. Sustainability is not achieved by creating a set of universal principles applicable to any situation. Instead, it is achieved by applying a collection of disparate particular knowledges. Why does burning fossil fuels cause global warming? What is the best ratio of inputs to make a good compost heap? Why does an A-frame help you to map a useful contour bund? What is a legume and why is this important? The task of permaculture education is to organise this vast array of particular knowledges into an accessible format that covers as much ground as possible. The overall guiding framework is that of the environmentalist movement as a whole. Create sustainable solutions and look after other species, not just human beings.

Permaculture as a social movement

Chapter 3 canvassed three ways of looking at permaculture as a social movement. The first looks at permaculture

in terms of typical social analysis of social movements of the present period. Such movements challenge dominant culture and society. They are constituted by semi-autonomous networked parts. There are participants rather than members. The second approach considers permaculture as a 'discourse'. Permaculture is held together as a social movement through the relationships between permaculture people and the permaculture canon. In the third approach, permaculture is considered in comparison to cults – how is permaculture like a cult and how is it different?

Reflecting on permaculture as a social movement, I am aware of some tensions. On the one hand, permaculture is a typical social movement with a horizontally networked and open social organisation. Ideas and new practices are locally initiated and developed. On the other hand, these practices, to be 'permaculture', must be tied to a canon consisting of key works of the two founders – a 'charismatic foundationalism'. This is a strength in so far as these works are inspirational and draw together ideas from a number of fields that work well in combination. But it becomes a weakness in so far as 'charismatic foundationalism' becomes a form of fundamentalism that *fixes* permaculture to a set of resources which date as time goes on.

There is a mismatch between (a) the idea of sustainable agriculture as a 'science', which implies that it is revisable and can accommodate new discoveries and inventions, and (b) permaculture as the canonic wisdom of the founders. *Principles and Pathways* (2002) could be considered as providing a way out of these problems. It stresses

universal principles that inform all instances of permaculture – allowing particular new discoveries to be covered by these principles. Yet this emphasis on universal and abstract principles masks the necessity for permaculture to teach accessible up to date concrete information on sustainable agriculture. It misses the necessity to provide a constant re-examination of the permaculture analysis of the environmental crisis. As we have seen, permaculture participants have abandoned some of the most central ideas of this analysis. But it is hard to acknowledge and debate these departures while retaining charismatic foundationalism.

Potential recruits to permaculture movement can be put off by aspects of the canon that now seem dated. This has become most obvious in relation to gender and race issues. People in permaculture who speak or write about these issues often make this comment. 'Some of my friends and associates have decided to have nothing to do with permaculture because of what they take to be its flawed approach to gender or race issues.' Flaws that their friends trace to the canon, to the personal conduct of a founder or to their social position, as older middle-class white males. Other tendencies with messages similar to permaculture are not burdened with the disadvantages of charismatic foundationalism. For example, 'agroecology' is a revisable science of sustainable agriculture. Agroecology books and articles can be critically examined by participants in *that* movement without calling 'agroecology' itself into question. The movement is not hostage to the personal conduct, the writings or social position of any particular author.

One approach is to treat certain aims and understandings of permaculture as key ideas and consider the canonic works as *particular* examples of these ideas. Other works that attempt to develop sustainable strategies may be no less significant than the canon. Heather Jo Flores writes of 'twenty plus best books in permaculture' written by women. She assembles summaries of relevant works, recommending these to participants in the movement.[1]

Another stress within permaculture is the tension between an ethic of sharing and the reality of market competition in permaculture careers. There are fields in which permaculture careers do not *always* require market competition with others in the movement. For example, landscape design, garden maintenance, farm design consultancy, community supported agriculture, organic farming and eco-building. Yet, it is difficult to make a permaculture living. Permaculture teaching often ends up as a central career plank, even if not planned.

The permaculture teacher sets up their website and offers to teach the PDC. Success can depend on factors such as the reputation of the teacher, the cost of the course, IT competence, business knowledge, the site of instruction as a permaculture model, whether the course is hands on or by remote learning. An almost universal practice names sites with the most general title possible – for example, 'Holistic Permaculture Design'. Such names present a site as having 'authority' within the movement. Teachers *without* a strong reputation offer courses at low prices. They stress the accessibility of their offerings, condemning the 'cult of celebrity'. Their low prices put pressure on those who *are* celebrities. When courses are

constructed for online learning, they may be plagiarised by other teachers who treat them as a common resource. Factionalism in the movement can come from this market competition. This competitive pressure is absent from permaculture expressed through participation in community clubs, non-monetary projects and free instruction. Yet these non-monetary options struggle to get sufficient voluntary commitment.

Permaculture strategies and visions

Permaculture shares the expectation of 'system change' with many currents of the left. In permaculture this transformation is usually described as an end to 'industrialism' rather than an end to 'capitalism'. The permaculturists I spoke with were divided on strategy to achieve system change. Quite a few praised permaculture as a 'positive' approach – a contrast to confrontational left politics. Others indicated that permaculture is moving away from an exclusively anti-political strategy. Some stressed the necessity for permaculture to influence regional and national policy. Some interviewees were participating in political lobby groups and supporting particular political parties. A common sentiment was the necessity to work on alliances with other groups.

Responses to questions about an ideal permaculture society were varied. All shared the view that a new system would require degrowth and would have to adapt to energy descent. Some combined this view with an *eco-modernist or ecological modernisation* vision. They argued that digital communication would favour smaller players

and permit the poor to enter the market economy. Capitalism would adapt and achieve sustainability through new technology and a cultural shift, permitting degrowth and environmental sustainability.

Radical reformism was the strategy most favoured. In the radical reformist vision, bottom-up grassroots approaches seed central aspects of the new society. These are small ethical businesses, ethical workers' cooperatives and voluntary community provision through sharing. Supervising this, the state operates a system of intensified social welfare and government intervention. This intervention controls the market economy, prevents environmental damage and supports social justice.

The next most favoured option was the *town and village market bioregionalism* model. Again, a combination of small ethical businesses, ethical cooperatives, self-provision and voluntary community work are the economic content of the system. Government is primarily located at the village and township level – democratic town meetings supervise the localised market economy. Beyond this, bioregional committees sort out the infrastructure and production requirements for a largely self-sufficient bioregional economy.

There were only a few I spoke with who strongly endorsed a *socialist* or *anarchist* model for a new society.

It makes sense for the permaculture movement to be divided on the question of what a post-industrial system might look like. To cohere as a movement, permaculture only needs to agree on the core strategies that the movement will *itself* undertake. At the same time, different parts of the movement may well disagree on the ultimate

end goal. While doing permaculture in one part of their lives, participants in the movement can also be political in other ways, adopting other strategies and working on other issues. Making this concrete, permaculture people may 'do permaculture' by working at some agricultural project while at the same time they are 'doing environmentalism' by working with the Green parties or 'doing anti-racism' by attending Black Lives Matter rallies or 'doing social justice' by sending money to an international NGO.

Personally, my position is an extremely niche viewpoint in permaculture. My own view is most similar to the one anarchist I interviewed. I favour a non-monetary gift economy as the ultimate goal. It suits me that permaculture has not *established* any particular viewpoint on system change.

The gift economy position begins with a critique of money and the market. The market and money, as social institutions, direct people to make decisions based on price. It always makes sense to buy the cheapest and sell for the most money you can get. This is also a dominant practice informed by a hegemonic cultural expectation. It is this discourse and practice which actually gives money meaning. Consequently, the market is deaf to use values which we need to take into account – the enjoyment of work, the impact on other species and our future, the wellbeing of those who do not have enough money to buy what they need. If moral imperatives like this were ever to predominate over market considerations, the market would cease to operate as a 'market', and money would have no meaning or utility.[2]

In addition, the market depends on alienated labour – your money can buy things *because* other people have had to do paid work to supply them. All these other workers have been compelled to work in jobs that will make an income, not necessarily the jobs they would prefer. They cannot distribute the products of their work to whoever it is that needs them most. Business has to sell whatever they produce to people who have the money to buy it. Most jobs in a market economy are being run by an authoritarian boss, who is exploiting the workers. This system of labour alienation has been the root of environmentally catastrophic consumerism – creating demands for increasing consumer satisfactions to compensate for alienation at work.[3]

The gift economy alternative has no monetary system. There is no money and nothing equivalent to it such as exchange by barter, digital money or LETS. There is no state. Monetary payment for work is unnecessary; goods and services are provided free of charge by a network of voluntary collectives, and by self-provisioning households and communities. Chains of production operate through gifts between different kinds of productive units. For example, steel workers provide steel to be given to those who make rails who, in turn, give the rails to those running the train service. Specialist goods are transferred by sustainable transport.

A lot of production is localised. Sufficiency and environmental goals can be best achieved by minimising energy used in transport. This local production is supplemented by networks organised to produce and distribute specialist goods and to exchange cultural products. For

instance, members of a largely self-sufficient rural town might conduct one part of a coordinated plan to produce computers, assembled from parts put together in different towns.

No central authority directs the economy. Instead, 'compacts' ensure everyone's basic needs are met. These are negotiated agreements to provide and receive goods and services. They are worked out in advance of production, creating the predictability necessary for a technologically complex society.

What motivates people to work in such an economy? Within each 'collective', village and household, work is allocated to ensure that everyone gets to do something interesting, as well as contributing to the mundane tasks. Participating in production, people are motivated by a hegemonic discourse of mutuality. We all have a role in making life comfortable. Status – the appreciation of others – motivates people to achieve and provide useful services, as in stateless societies of the past.

As the research for this book shows, the gift economy utopia is a very marginal choice in the permaculture movement. My argument is that a gift economy would be the most likely way to realise permaculture ethics and move to a sustainable future.

Prefiguring the future

In the fifth chapter I examined the grassroots strategy of permaculture through particular cases, seeing how these interventions 'prefigure' the post-industrial system. In the permaculture canon, there is no expectation that a transi-

tion will be led by government initiative. Instead, we are to strengthen various alternatives that already exist, infusing them with permaculture ethics. Mollison and Holmgren do not seem to anticipate any particular problems in setting up these alternatives within the market economy that now exists. They do not appear to imagine that deep structures in today's economy will cause problems. Instead, the problems are all in ethics and personal commitment. Given a cultural change, the expansion of these forms of institution all seems perfectly compatible with a monetary market economy.

My analysis challenges this assumption and suggests a different way of looking at these prefiguring institutions. Some of these alternatives are totally non-monetary gift economy options – household provision, community gardens. Others are hybrids of a capitalist economy and a non-market gift economy. In my analysis, the domination of this hybrid practice would not lead to a post-capitalist market economy but to *the end of the market* and money. In the present situation, it is imperative that these hybrids work on both sides of this fence.

The examples show how these organisations struggle against the limitations of the market economy, experiencing stress. The mistake shared by the permaculture founders and by some left social theorists is to fail to see the market, money and capitalist ownership as *social forces* that operate to constrain alternatives. On the ground ethnography reveals these social forces to be quite real. The stresses experienced by these projects should not be interpreted as 'failures' of this strategy. Some of these projects have certainly failed and been a disappointment but

others have been remarkably successful. The point is that a hybrid inevitably struggles to maintain its ethical goals in the context of an economy operating by market logic. It is a mistake to think that the only problem for permaculture projects is a failure to 'take responsibility'. This mantra foists the problems of a market economy onto the shoulders of those struggling against it. Much better to recognise how the dual aims of hybrids have to be realised at once and do not readily go together.

Up to a point, the findings of this chapter are not news to the permaculture movement. In reality, permaculture activists and authors are very much aware of the ways in which the market economy makes it difficult to set up ethical and successful business undertakings. They are equally aware of the ways in which the necessity to earn an income impedes non-monetary projects run with voluntary labour. My contention is that this day to day anecdotally based knowledge has no place in the theoretical analysis of social change offered in permaculture writings. According to those writings, prefiguring institutions are readily set up *within* the present market industrial society. My suggestion is that these grassroots strategies continue to be pursued but that we understand their potentials, problems and difficulties more clearly.

Decolonising permaculture

The previous chapter considered issues of gender and colonialism. On the one hand, the movement needs to work out the practical strategies which can be effective in enabling women and the colonised to be included

more fully. On the other hand, it makes sense for social movements to orient themselves to particular problems and then recruit people who are concerned with *that* particular problem and have a personal interest in *that* particular issue. I reject the slogan that 'everything is connected' – when it is taken to mean that we have to operate on all fronts *with equal emphasis*, no matter what the issue.

For anti-colonial politics, a list of strategies to be adopted has been very well summarised by the working group at the 2014 North American convergence. For example, run workshops on oppression politics at convergences, acknowledge the sources for ideas and technologies, facilitate the operation of workshops restricted to people from particular non-white backgrounds, acknowledge Indigenous land. In addition, permaculture can strengthen strategies that take permaculture beyond the middle class. In particular, community food gardens, rural self-sufficiency projects in developing countries and Indigenous communities, charitable donation to development NGOs, variable pricing, donations of educational outreach to those without middle-class incomes, donations to community self-help organisations. These works *within* permaculture can be supplemented by direct participation in movements related to these issues – Black Lives Matter, refugee rights, Indigenous land rights.

The politics of gender in permaculture is partly a micropolitics of households that is hard to influence through any formal process. The authoritative public male, working on outdoor permaculture constructions, while the female partner makes preserves and attends to the

children, is a pattern that is difficult to confront. Those involved do not view these divided task allocations as an inequality but as egalitarian complementarity. 'It works for us' is the slogan. Feminists and their supporters in the movement could refuse to work with people who perpetuate gender inequalities – but that would not be helpful in pursuing common goals in sustainability. A more fruitful approach is to work on celebrating those who are consciously changing and doing it differently, single women, egalitarian heterosexual couples, lesbian and gay couples, women who are being the public figure, the teacher or the homesteader.

What we have seen in the movement are tactics such as (a) setting up a women's permaculture guild to offer permaculture training and publicise women's permaculture practice and writing (Heather Jo Flores) and (b) opening a consultancy providing business advice to women in permaculture careers (Karryn Olson Ramanujan). It makes sense to have women's caucuses at convergences. Free childcare at permaculture convergences is good. Convergence organisers should arrange gender balance for plenary addresses. Permaculture teachers could start treating Rosemary Morrow's books as part of the permaculture canon.

Permaculture ethics can be viewed in relation to ethical philosophy by feminist and ecofeminist scholars.[4] At present, permaculture ethics sits uneasily at the junction of two distinct ethical philosophies. In one of these, ethics is a set of law-like commands, creating obligations – fitting with the permaculture phrase 'taking responsibility'. In another, ethics is a matter of personal concern,

an altruism that is also fulfilling for those who are 'taking care'. I do not think it is any accident that the prime example of the first kind of ethics is the ten commandments, the old patriarch laying down the law. Whereas the prime example of the second type of ethics is the mother looking out for her children. I would like to see permaculture more clearly embrace the ethics of care and move away from an ethics of moral duty.[5] Ethical judgementalism can attract some people. But it can make others uncomfortable, guilty about their everyday compromises with the system and exiting without fanfare.

Concluding note

Sometimes I worry that the permaculture movement cannot last. Some of the problems for the movement identified in this book may be addressed within the parameters of permaculture as it is already constituted. I would put the issues of gender and racism in this camp. Clearly, these are not easy to solve in the movement and even less in the world at large. But nothing about the permaculture movement *as such* prevents us from treating these issues more adequately. In fact, we can only prosper by addressing them. In another camp there are problems that are more intrinsic to the constitution of permaculture as a social movement. For example, the definition of permaculture, the charismatic foundationalism that goes with a movement based on a canon of inspirational writings. These are problems that are not easy to address without calling into question fundamental structures that make our movement cohere.

I am concerned that young people who might in the past have embraced permaculture are now more likely to join the dots to combine agroecology and degrowth. To arrive at a position similar enough to permaculture without being caught up in 'permaculture' as a named combination. For me, that would be disappointing. There is an advantage in permaculture as a package with a particular combination of ideas and tactics that work well together. An approach to system change. An understanding of energy descent and a commitment to degrowth and localisation. A popular education in sustainable agriculture and settlement design. An ethics that links sustainability to deep ecology and social justice. A great slogan to express an ethical position adequate to our present crisis. There is also a wealth of knowledge embodied in the movement that might be lost if current participants fail to attract new recruits to permaculture.

So, there is a body of writing here that anyone interested in agroecology and degrowth should be paying attention to. There is also a social movement that can support activism on these issues with experience and social connections. There is a particular take on environmentalism associated with permaculture that is distinctive. There is a set of strategies and the experience of making these strategies work.

Some of the most persistent critiques of permaculture from the left are ill-informed, as I have attempted to show in this book. You can understand why people on the left may find permaculture 'anti-political' and believe that the movement is unaware of the necessity to challenge the capitalist system. Yet, this critique is mistaken because

it ignores the ways in which the movement has always been perfectly well aware of the necessity for system change. Permaculture has a coherent and quite successful strategy to that end – a strategy that I describe as using the affordances of current society to create 'hybrids of the gift economy and capitalism'. This leftist critique of anti-political permaculture is *by now* ill-informed because permaculture (as a set of individuals and organisations) is moving very quickly towards alliances with other forces that are also challenging the system on a variety of fronts.

If the hallmark of 'political engagement' is attempts to reform or take over the state, then permaculture is ambivalent. But no more than the left in general. For me, that (political science) definition of 'political engagement' forgets that systems of power in society are not always organised through a state apparatus – the discovery of the second wave feminist movement – and ignores the option of anarchism.

It is close to impossible to get solid figures on the permaculture movement to indicate whether it is expanding or not. My sense of the situation comes from investigations carried out for this book. The internet is hosting numerous new (and old) permaculture websites, YouTube clips and Facebook pages. There are new dedicated journals and new books on permaculture being published. Well-attended convergences, both national and international, have been run in recent years and will start up again as soon as the Covid-19 crisis is less pressing.

Whether the permaculture movement will continue to grow or be supplanted by other movements with similar aims is one question. Whatever the outcome in that

regard, there is no doubt that the political discoveries and intervention strategies of permaculture will be continued. Permaculture has worked hard to establish grassroots intervention as an alternative to stock standard leftist politics. It has pioneered networked popular pedagogy in sustainable agriculture and settlement design. It has helped current society to accept the inevitability of energy descent and the need for degrowth. It has begun the long task of localising production and consumption – giving control of the economy to those doing the work. It has sought accommodations between the two environmentalist goals of sustainability for human economies and care for other species. These tactics and strategies will live on in permaculture as the movement adapts to coming circumstances. Or they will live on in whatever other social movements take up this space.

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CONCLUSION: PERMACULTURE POLITICS

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Index