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CULTIVATING NATURES: MOVEMENTS IN SOUTH AFRICAN PERMACULTURE

By Elizabeth Kruger

A thesis submitted to the Faculty of Humanities, University of the Witwatersrand, in fulfilment of the requirements for the degree of Doctor of Philosophy (Anthropology).

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List of Acronyms

AMD	acid mine drainage
ANC	African National Congress
APT	Applied Permaculture Training
AZPI	Arid Zone Permaculture Initiative
DEAT	Department of Environmental Affairs and Tourism
EIA	Environmental Impact Assessment
EJM	Environmental Justice Movement
EJNF	Environmental Justice Networking Forum
EMP	Environmental Management Plan
FTFA	Food and Trees for Africa
GEAR	Growth and Redistribution Programme
IPC	International Permaculture Convergence
LC	Land Custodian
LCS	Land Custodial Site
NEMA	National Environmental Management Act
NGO	Non-governmental organisation
NP	National Party
NPO	Not-for-profit organisation
PDC	Permaculture design course
PES	Permaculture Education in Schools
PGS	Peer guarantee system
PRI	Permaculture Research Institute
PRIA	Permaculture Research Institute of South Africa
RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
SDI	Spatial Development Initiative
SEED	School's Environmental Education and Development
SMT	Social movements theory
SPP	Surplus People's Project
TBNCA	Transboundary conservation area
TFCA	Transfrontier conservation area
UK	United Kingdom
US	United States
USA	United States of America
USAID	United States Agency for International Development

Abstract

Environmental history and anthropology are disciplines yet in their infancy in South Africa, and still leave many opportunities for further research. The global permaculture movement has emerged as one amongst an array of environmental movements in South Africa that seek alternatives to industrialised capitalist economics which have been identified by many observers as problematic and deleterious to both human and ecological 'systems'.

This research explores permaculture practice as an environmental social movement in the South African context, drawing on a wide array of theory including environmental anthropology, environmental history, social movements theory and 'whiteness' studies, amongst others. These bodies of theory have been used to analyse the research data drawn primarily from established anthropological methods of participant observation, narrative elicitation through deep and open-ended interviews and the observation of social and land use practices in particular detailed case studies.

The research findings indicated that while permaculture ideology proposed an alternative utopian approach to human-ecological relationships associated with the trappings of neoliberal economic models for development and conservation, the actual practice of permaculture - communally-based resource management and the realisation of these ideals - while developing knowledge around localised sustainable land-use strategies, appeared to necessitate the regulation of social relations and resource access, alignment with the state's environmental and land-use policies and were largely made possible by white privilege rooted in the country's colonial and apartheid history. The research highlighted the need to recognise the social and historical specificity of permaculture ideology and practice within the South African context.

Keywords: South Africa; Environmental Anthropology; Environmental History; Environmentalism; Permaculture, Environmental Social Movements; Whiteness

Chapter 1: Introduction - Environmental Anthropology Engaging Permaculture in South Africa, a Nation Predicated on Distinctions of Race and Class

> Doomsday predictions can no longer be met with irony or disdain. We may well be leaving to coming generations debris, desolation and filth. The pace of consumption, waste and environmental change has so stretched the planet's capacity that our contemporary lifestyle, unsustainable as it is, can only precipitate catastrophes, such as those which even now periodically occur in different areas of the world. The effects of our present imbalance can only be reduced by our decisive action, here and now. We need to reflect on our accountability before those who will have to endure the dire consequences (Vatican Online: 2015).

So declared the Pope of the Roman Catholic Church in its 2015 encyclical. The destructive effects of human activities on the environment at a global scale have now been commented upon for decades, from the pulpit to parliament, in popular protest and by professors. Yet, economic development, industrialisation and natural resource extraction continue apace – and the earth, our home, continues to be desecrated by our activities. Mining scours the earth, agriculture spews a chemical cocktail into our rivers and oceans, and our fuel addiction coughs noxious gases into the air.

Human exploitation of the environment is by no means a new phenomenon, nor is resistance to that (Pouchepadass 1995, Grove 1997), but the magnitude and scope of anthropogenic environmental change is unprecedented. Much of it is associated with industrial and natural resource extraction activities such as mining and agriculture. It has led to species and habitat loss, water and air pollution, ocean acidification, depleted fish stocks, land degradation, soil erosion and climate change.

The connection between development-related activities and environmental degradation has been recognised by governments and multinational agencies that advise on national economic and environmental policies. “Sustainable development” ideas are now included in national policy, and governments like South Africa sign

international environmental accords such as the Kyoto Protocol and the Convention on Biological Diversity, recognising the need to address the way that economic development is practised, its effect on the environment, and the links between environmental degradation and future economic development. Such environmental change has been the primary area of interest for ecologists, who have developed theories to account for change amongst biotic communities, and increasingly to understand human impacts on these communities.

It is widely recognised that we, the human inhabitants of planet Earth, need new ways to respond to ecological changes that threaten not only human survival but that of other species too. Contemporary environment social movements are amongst the interest groups that recognise that we need new ways to engage with each other and with the planet beyond the economic models offered by profit-oriented global politics and economics.

Permaculture is one environmental movement that recognises anthropogenic environmental change and degradation especially associated with global capitalism. This thesis takes permaculture, an ecologically-oriented discourse with attendant social and ecological practices, as its primary focus. It asks whether and in what ways permaculture represents an alternative ecological discourse and social movement in the South African context.

Permaculture is described as

> the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter, and other material and non-material needs in a sustainable way. Without permanent agriculture there is no possibility of a stable social order. Permaculture design is a system of assembling conceptual, material, and strategic components in a pattern which functions to benefit life in all its forms. The philosophy behind permaculture is one of working with, rather than against, nature; of protracted and thoughtful observation rather than protracted and thoughtless action; of looking at systems in all their functions rather than asking

> only one yield of them; and of allowing systems to demonstrate their own evolutions.
>
> (Mollison 1988: ix-x)

Permaculture promises salvation from the clutches of global capitalism through the application of ecological theory and adoption of an apparently universal ecocentric ethic ostensibly derived from non-industrialised traditions and societies. While there is a plethora of literature developed on permaculture – much of it technical – there is little reported on permaculture in terms of its theories or practices. There is little formal analysis in terms of its constitution as an environmental social movement, and its history and development have been largely undocumented. It appears to represent an alternative model for human-ecological interactions to what has unfolded under industrial capitalism. Permaculture is poorly understood and little analysed. A simple goal drove the direction of this thesis: to understand permaculture's adoption in South Africa as one of many contemporary global environmental movements which anthropologists argue require our attention if we seek solutions to contemporary environmental problems, and address their causes.

My interest in permaculture grew through my close relationships with people deeply involved in the movement and deeply moved by its ideological promises. I was working with organisations and people from a range of class, race and cultural backgrounds who were enthused, positive and active in seeking to create new ways of relating to biophysical systems and to people in a non-exploitative and regenerative and supportive way. I was also developing university courses in environmental anthropology and comparing my personal experiences with the permaculture movement with the kinds of environmentalist and environmental management practices described and analysed in environmental anthropology literature. In particular I was struck by how the critiques of nature conservation developed under colonialism, and biodiversity conservation and contemporary mechanisms for environmental management like environmental economics and carbon trading, resonated with the critiques of global capitalism presented in permaculture theory.

From these experiences, I developed a genuine interest in research permaculture as an alternative form of conservation practice in the South African context where our

politics and policies have been historically and contemporaneously dominated by commercial interests, especially those associated with the exploitation of natural resources. Permaculture - and environmentalist movements more generally - has had little academic analysis in South Africa, although it has received academic interest and been included in certain university initiatives in the country, as I indicate later on. I thought I could make a contribution to an understanding of permaculture for the movement itself and for the academic record.

Initially I took a standard anthropological approach employed in environmental anthropology to understanding permaculture practice in South Africa. I decided to focus on how people approach this concept of "the environment", and try to identify the cultural models that participants in this movement generated around human-ecological relations, their propositions for change and new models for human behaviour. I hoped to compare these with the accepted models for environmental management employed in the South African state policy, and analyse them through the environmental anthropological theories and flamings.

However, only when I was really prompted to engage with anthropology's concern with self-reflexivity and socio-economic and historical contextualisation did I realise that I needed to broaden my analytical scope to include race. This necessity arose out of my biological and historical positioning as a writer in a very pale skin who is the offspring of a lineage of witting and willing, or unwitting and unwilling, colonists; as one writing in post-colonial South African society that was historically engineered around racial categories and the privileging of pale skins like myself; and in representing and analysing an ideological environmentalist perspective that was generated from within a "Western" or "white" philosophy and intellectual tradition initially developed by two white men in post-colonial Australia.

Literature from whiteness studies provided direction for this kind of race-oriented analysis, asking questions around how the experiences and beliefs expressed amongst one race category - "white" in particular - might be universalised and accepted as normal, or particular environmentalist perspectives might be a function of racial privilege, and obscure the experiences and perspectives of people who don't fall into privileged race categories. However, the theory is founded on a notion that culture is a

function of race or skin colour. This is a complicated issue in South Africa, a society that was built on race categories that were used as the basis for the receipt of state-sanctioned privilege or punishment where beliefs, practices and policies were developed around racial categories. In protest to this kind of philosophy and thinking, anthropological theory has long recognised that race is not a biological fact, and that skin colour does not denote culture. In recognition of the historically-produced significance of skin colour in South Africa, and the uptake of permaculture, a philosophy rooted in Western/European/"white" societies, amongst people categorised as "white" who were benefited by that system, I am forced to refer in my writing to individual human beings and groups in terms of these repugnant and dehumanising categories that were used to justify exploitation that continues to characterise South African society today.

These self-reflexive and socio-historical realisations shifted the focus of the research from an interest primarily in models for human-ecological behaviour to the ubiquitous salience of race in any collective social impulse in the South African context. However, the latter insights were only applied in the analysis of the data, and not in the approach taken to the research and fieldwork from the outset.

This research and analysis of permaculture's manifestation as a global environmentalist movement in South Africa thus came to span a wide range of analytical perspectives beyond even the recognised propensity for interdisciplinarity in environmental anthropology. In addition to including *post-hoc* analyses of race influenced by whiteness studies, this thesis draws on insights from environmental anthropology, social movements theory and environmental history. It touches on the history and theory of permaculture, South African history and contemporary environmentalism here.

The ethnographic research - rooted firmly in anthropological tradition - took place at two study sites which I hoped would provide access to a wide range of perspectives on permaculture practice in the South African context. These study sites were constituted by organisations that provided education in permaculture in the Western Cape province of South Africa. For the purposes of anonymity I have dubbed these Permaculture Education in Schools (PES) and the Arid Zone Permaculture Initiative

(AZPI). I do not give dynamics in other provinces the attention adequate for a comprehensive account of the development of permaculture in South Africa as a whole because this was beyond the scope of my research. However, I do not entirely neglect them, and, as the long-standing relationships and connections outlined cursorily above already show, they are intertwined with events and people under detailed analysis here. I took the two sites as indicative of the development of permaculture in South Africa more widely. Instead of providing a blow-by-blow account of how these organisations developed, I chose instead to share the experiences of a few individuals who were involved in the permaculture movement in South Africa, and these organisations. Their experiences indicated some of the ways in which the movement took hold in South Africa, and provide a view of the characteristics of a movement constantly evolving. I provide accounts of events and permaculture-related activities in terms of their significance to the establishment of social networks around the concept of permaculture, and the dissemination of knowledge that falls under the broad concepts included in permaculture theory. As shall be shown, these sorts of events and activities were closely related to the organisations and individuals who participated in them.

My engagement with these two organisations, and participation in events, provided me with introductions to a wide range of participants in permaculture-related activities, and I could work with them, and interview them about their experiences too. In this way I was able to get a generalised sense of the kinds of motivations they had to take PDCs and seek out knowledge about sustainable living and food production, and a sense of the demographics of the movement. I was also able to construct some of the historical development of permaculture in South Africa in the process, through their reminiscences of events and occasions.

To some extent, I was able to report on the first, second and now third generation of permaculturalists, who learnt about permaculture within these various organisations and locations, and with people who had been learning about permaculture and putting it into practice for the over twenty years since its arrival in South Africa. I hoped to develop a sense of what became of this movement in that time, and the characteristics it displayed since its conception, and inception in South Africa.

In total, I recorded 40 permaculture-related projects through interviews and interactions on social networks like Facebook. Fifteen of these were private residential projects, nine were either community or school initiatives, while four were educational projects. The initiatives I encountered included backpackers, intentional communities, biodynamic farms, educational institutions (including two universities), and sites where PDCs and permaculture-related workshops were offered. These were amongst a range of recorded and unrecorded private initiatives. A green business directory, www.urbansprout.co.za had a listing of 71 permaculture-related businesses and projects. I was able to ascertain that 11 sites provided permaculture training in the form of PDCs, although this was by no means a conclusive number. There may well have been more, but because there was no central channel of communication or representative body for permaculture in South Africa, it was difficult to ascertain a more accurate number.

The individuals that I interviewed were amongst those who were involved with permaculture in South Africa from the outset, those who had initiated intentional communities, and participated in PDCs and permaculture-related activities. Of the 98 informants, 72 would be classified as “white” under apartheid racial classification, 20 would be categorised as “coloured' and 6 as “black”. The majority of informants were over the age of forty – most of whom were white. The younger age groups had a wider diversity of racial categories. I do not suppose that the demographic was representative of permaculture as a whole in South Africa, since it does not include a range of people who engaged with permaculture in South Africa's rural areas and through schools education programmes. It is not reflective of the entire movement in South Africa, and does not account for the numerous teachers and school children reached by the educational programmes I encountered, nor the efforts made by individuals. It does not account for initiatives such as those engaged with by “black” activists that I met who were trying to bring permaculture and ecovillage design in their own villages and townships, or for the numerous small projects and initiatives driven by people who had engaged with permaculture or taken PDCs, but did not label their initiatives as “permaculture”.

The AZPI, a Section 21 Company, was located at Pypsonderwater farm a few hundred kilometres from Cape Town in the semi-arid desert. The AZPI was intended primarily

for the teaching of permaculture, and is dealt with as a detailed case study to provide insight of how the discourse of permaculture was put into practice in that context. It was located in a rural setting, and provided PDCs, natural building courses, practical permaculture internships, volunteering opportunities and tours. The training here was based on living models – homes, homesteads and broadscale land management practices – that people who wanted to learn about self-reliant, ecologically-oriented practices through the lens of permaculture could engage with. Since the first PDCs were taught there in 2007, there have been 360 PDC graduates.

PES was a not-for-profit organisation (NPO) established to assist under-resourced schools to grow gardens for environmental education based on permaculture principles and at the same time to grow food for the children to eat. It was situated at a primary school in the sub-economic area of Mitchell's Plain, a sprawling residential area on the Cape Flats established by the apartheid government following forced removals. It was established under apartheid Group Area's Act and remains largely economically impoverished and marginalised (Standing 2006: ix). It is sandy, windy and has little vegetation, dominated instead by concrete walls and side walks, and characterised by apartheid-style apartment blocks and homes. It consists of many smaller suburbs within it, and is beset by problems associated with criminal gang networks. PES had started out providing support for teachers in this area to grow gardens and provide environmental education to pupils in under-resourced schools using permaculture design concepts and principles. The organisation also provided the premises and models for permaculture training, and acted as a node for creating small businesses. The project included a vegetable production area, a model sustainable low-cost house, a food forest, nursery, seed bank, outdoor classroom facilities and mushroom growing facilities. PES also had a growing focus on developing youth and equipping them with skills to engage with the "green economy". Here, permaculture design courses were offered as part of an applied permaculture course (APT) and once as part of a 5 month youth internship programme aimed to equip youths from under-resourced backgrounds to work in the "green economy". Organic gardening courses, introduction to permaculture workshops, seed saving workshops and volunteering opportunities were also made available. The organisation had become increasingly geared towards establishing food gardens in the residents' homes near to the school as part of a home gardeners project.

Through these two sites I was able to see permaculture being put into practice and also gain access to a wide range of people who participated in permaculture, and through that build an understanding of this broader movement, its constitution, discourse, dynamics and demographics. I interviewed volunteers, facilitators, PDC graduates, and programme participants. I focused on the one hand on the activities, individuals, events, and narratives emerged in relation to this word, “permaculture”. I did this in order to give a sense of the movement's dynamics and discourse more generally. On the other hand, I focused in particular on the AZPI to provide a detailed account of one organisation to provide a perspective on how permaculture was put into practice in that specific situation.

The chapters that make up this thesis peel back the layers of relevant theory and detailed evidence to develop insights and provide a picture of permaculture practice and environmentalism in South Africa within a global context.

The first half of this thesis is mainly concerned with the theoretical debates that surround the phenomenon of environmentalism, particularly in the South African context. In the second chapter I present the main ideas and insights generated in social movements theory and environmental anthropology that informed my research approach and questions, and the ways in which I analysed the data. These bodies of theory take discourse, knowledge and practices and their socio-economic and historical production as the principle areas of enquiry into environmental movements. The elicitation of such data provides material for the kind of race-oriented analyses that a perspective from whiteness studies introduces, and I look at the fundamental ideas that drive concerns in whiteness studies.

In Chapter 3, drawing on insights from South African environmental history, I provide some historical context for the emergence of contemporary environmentalism in South Africa, which allows for a more nuanced understanding of permaculture’s appearance in the environmentalist landscape and the significance of a race-oriented analysis in terms of South Africa’s colonial and apartheid history. In the fourth chapter I detail the kinds of methods and methodological approaches that I used to elicit data and materials to better understand permaculture practice as a global

environmentalist movement that has taken hold in South Africa. Mostly, I refer to well-established anthropological methods, but show how these are re-framed and re-purposed to account for global social dynamics at the local level. I include in this chapter consideration of the kinds of challenges that I faced and ethical considerations I took heed of in the execution of my research aims.

The second half of the thesis introduces the data generated from the research and the application of anthropological methods, with the aim of answering the kinds of questions raised in environmental anthropology and related social movements theory, and analysing that data in terms of the issues raised in the whiteness literature. Chapter 5 considers the historical production of permaculture in Australia, and its intellectual and theoretical antecedents and presuppositions. The chapter, based on existing permaculture literature, delineates permaculture theory and identifies the principle elements of the discourse it generates - in particular, scientific ecological theory and ethical injunctions ostensibly rooted in non-industrialised societies. In the process, the ideological and political dimensions of the discourse are brought to light, and the movement is situated as a form of contemporary environmentalism with an anti-capitalist bent.

Chapter 6 looks at how the permaculture discourse entered South Africa, and how it was received and interpreted at the specific moment in the country's history as it transitioned from one political system - absolute apartheid - to another, apparent democracy. Detailing permaculture's adoption amongst a range of practitioners in South Africa allows for an understanding of the movement's dynamics and trajectories, and for questions around race-oriented interests to be addressed - in particular, the ways in which this discourse of Eurocentric/Western/"white" origin was taken up in post-apartheid South Africa.

Chapters 7 and 8 hone in on the practice of permaculture at one particular site in South Africa, as it was interpreted and practised there amongst a group of mostly middle-class "white" South Africans. The first of these chapters constitutes an ethnography of the case study, looking at just how permaculture ideas were put into practice practically and socially. It details the principle land use strategies that included food production, house building, broad scale land interventions as well as the

social arrangements and innovations that the group engaged with to realise the ideals set out in the permaculture discourse. The ethnography indicates the kinds of challenges experienced by the participants in the project. It provides the basis for analysis in the next chapter that deals in particular with the kinds of paradoxes and contradictions that arose between the ideals that the group hoped to achieve by applying the permaculture doctrine and the reality of doing so in a rural South African setting amongst this group of mostly "white" people.

Given the range of theories and thematic areas of academic interest introduced in this thesis, a number of broad questions guide the presentation of data and its analysis, and I hope to have addressed these here. What sorts of people engage with the permaculture discourse in South Africa? What do people do when they say they are practising permaculture? How do people that engage in permaculture imagine themselves and their relationships to the world and the environment? What kinds of knowledge do permaculture people draw on, create and promulgate? What kinds of truths are established about the world, people and the environment in the enactment of this discourse? What kind of a world do these people envision through their enactment of the discourse? What happens when people apply this kind of discourse in the hope of creating an alternative to the strictures and structures of global capitalism? What kinds of tensions, contradictions and possibilities emerge in the enactment of this universalising ecocentric discourse? What is the role of race in the promotion and experience of permaculture in the South African context? How does the permaculture discourse deal with race as a socially significant feature of society in the South African context and environmentalism?

The conclusion, Chapter 9, brings together the main findings from each of the chapters that constitute this dissertation wherein I hope to have addressed the kinds of questions raised in the literature. Therein, I spell out the specific contributions that I hope this research has made to the bodies of theory that include environmental anthropology, South African environmentalism and perhaps even whiteness theory; and possible areas for further inquiry into the poorly documented and understood arena of South African environmentalism.

Chapter 2: Anthropological Approaches to Understanding Environmental Social Movements in Light of Whiteness Studies

This thesis takes permaculture, an ecologically-oriented discourse with attendant social and ecological practices, as its primary focus. It asks whether and in what ways permaculture represents an alternative ecological discourse and social movement in the South African context. While drawing upon a fairly broad network of practitioners, the case study under scrutiny was comprised of predominantly "white" middle-class participants. These various attributes of the study prompted me to consider pertinent theories and literature: environmental anthropology, social movements and, post-hoc and largely absent in the environmental anthropology literature, whiteness studies.

In this chapter, I provide some of the theoretical background to anthropological approaches to understanding human-environmental relationships, and link these to ecological theories that try to account for environmental change. In particular, I focus on the discussions and themes brought to the fore by environmental anthropologists who provide guidance on how to approach this study of human-ecological dynamics and the emergence of environmental social movements today. These approaches that have informed this research have similarly shaped the structure of this thesis, and I provide an outline at the end of this chapter to show how I have approached this task.

Anthropologists of environmentalism and environmental social movements take as a principle point of departure the way that people organise around and act upon various concepts of the environment, ecology and culture. They draw upon the insights of older anthropology, and more recent colonial critique, Marxist analysis, and post-modern theory, and draw upon a wide array of sources to understand contemporary environmentalism. Like environmental historians, they draw attention to the connections between the global emergence of environmentalism and processes of colonialism and industrialisation, and highlight the critiques embedded in the discourses and practices of contemporary environmental movements. In particular, I focus on the discussions and themes brought to the fore by environmental anthropologists in studying human-environmental dynamics and identifying models

for appropriate environmental behaviour. What they emphasise in particular is the connection between environmental discourses and practices and their historical constitution. These environmental discourses, it is argued, inhere particular ideas about human-ecological interactions, are tied to global political and economic processes, and have real consequences at global and local scales. While anthropologists seem to have dealt in detail with themes around colonialism, development, progress and the dominance of Western-enlightenment thinking that implies a European bias in environmentalism and environmental management, race does not feature as a notable analytical category in these discussions. A consideration of whiteness studies, particularly in the southern African context (De Kock 2010, Gqola 2001, Hughes 2010, Seekings 2008, Simoes Da Silva 2005, Willoughby-Herard 2007), introduces some perspective on the continued salience of race as it emerges in environmentalist pursuit in South Africa. It is from these perspectives that I analyse the emergence of permaculture in South Africa through two field sites as part of a broader global environmental social movement. The questions that these theorists and theories raise and have given impulse to the various chapters provided, are considered a the end of this chapter.

Anthropology's Relationship with Environment

Anthropology's mainstay is culture. Eriksen (1995:3) tells us that the root of the word is "to cultivate", and therefore that anthropology is "knowledge about those aspects of humanity which are not natural, but which are related to that which is acquired". Anthropology is therefore defined in relation to what it does not study – nature. There is a duplicity in this definition, since cultivation when referring to plants infers human engagement with the plant and earthly world – what we might call nature.

This tension between culture (what is made by humans) and nature (what is not made by humans) within the definition of culture as anthropology's principle area of interest permeates anthropological theory, and indeed what is widely referred to as Enlightenment philosophy (Simmons 1993). How exactly culture is defined is a contested arena (Thornton 1988) and given much theoretical consideration such that it has even been termed a navel-gazing discipline (Gonzalez 2004: 8), in spite of its

broad interest in humanity. In its original etymology anthropology is by definition the study of culture as distinguished from nature.

Anthropology's original concerns involve understanding the similarities and differences between human cultural forms and connections within and between societies (Eriksen 1995), and to document and describe the range of cultural variation in the world, both as an end in itself, and in the context of a perception that non-Western (a contested term) cultures were disappearing in the face of colonial conquest. Various theories have been developed to understand culture since the birth of anthropology, and it is some of the definitive ideas that I explore below to aid in the clarification of anthropology's relationship with nature.

Anthropology's primary method, *participant observation,* involves long-term fieldwork in a particular cultural setting which is supposed to provide the anthropologist-ethnographer insight into the workings of a particular (or supposed) culture through direct experience and practice, and through observation and engagement with people considered part of that culture (Bernard 1998: ix). Usually it includes interviews with members of the culture, and generally observing how things get done in that context, be it the observation of rituals, food production, or whatever activities that are practised by the members. The context within which these methods are employed, however, has shifted, leading a number of theorists to argue that new methods are required in anthropology.

Accordingly, anthropological theory has shifted over time, in response to a constantly changing object of interest and insights developed in the process of studying human culture. Anthropology's aims and methods have remained fairly consistent, but there is a thread that can be traced throughout the discipline's history. This is the notion of culture and nature as separate and inherent to the study. It is a foundational philosophy that emerged with the development of Enlightenment thinking, and it pervades contemporary Western academia. It is central to an anthropological inquiry into cultural forms which organise around a concept of environment or nature, as shall be revealed through consideration of various anthropologists' works that refer constantly to this apparent dichotomisation of nature and culture. However,

anthropology has also accounted theoretically for the relationship between the two, and the opposition is not always that distinct.

Simmons (1993) tells us that not all cultures subscribe to a dualistic notion of life on planet earth, seeing nature and culture as two separate entities. Simmons (1993) explains that there are different understandings and perceptions of "environment" and the terms take on different meanings for people depending on their context. He explains that often, "environment" is taken for granted as meaning the "natural environment" or "nature". It has largely come to be understood as the "the biological and physico-chemical systems of this planet outside of the bodies of humans, though not nowadays excluding the results of human actions in those systems" (Simmons 1993: 2). Most often, "environment" is solipsistically defined in relation to human beings – how we are affected and what we can get from it.

This conceptual separation of human and natural - humans as distinct from their environment - introduces a foundational idea in contemporary Western ontology and one of the major debates in anthropology.

Simmons, amongst many others, argues that a polarising perspective on nature and culture has a wide range of consequences both within academic thinking and practice, and for the way in which we act upon the world (Simmons 1993: 1), including how we interact with what is termed "the environment". Nature, from an empirical scientific perspective, as a collection of biological organisms and physical objects, which act together, is something which can be quantified, measured and predicted. Seen as subsidiary to culture and humanity, it is seen as something which humans are able to manage and control. As Jelinski (2005) put it, because humans were seen as having sole-rights to a soul, reason and culture, we consider ourselves above the "primitive, irrational, instinct-driven world", giving us "license to mastery over the natural world" (2005:257).

It is at the intellectual, historical, social (and, one could argue, ecological) juncture of the post-World War 2 through the 1960s that we see the emergence of radical critiques of – particularly – functionalist anthropology and ecology, their relationship with colonialism, and, indeed, "Western society" as a whole. And it is here that we

see the emergence of critiques, new and competing theories that came to bear on anthropology and its relationship with "environment" (Ortner 1984).

Marxist theory experienced a revival in anthropology at this time, and came to define anthropological thinking to a large extent into the 1970s, developing into the analytical approaches of political economy (Ortner 1984: 139-141). Marxist approaches shifted anthropological analyses from small-scale, isolated and bounded environmentally-determined functionalist paradigms to focus on contextualising anthropology's traditional subject of small-scale societies within broader international political and economic systems and the "effects of capitalist penetration upon those communities" (Ortner 1984: 141).

These insights and analyses were applied in political ecology. Greenberg and Park (1994: 1) claim that the political ecology approach takes cognisance of both structural factors and "analysis of ecosystems that are significantly but not always entirely socially constructed". Culture and social behaviour were no longer seen strictly in terms of their function of capturing resources and ensuring social or individual survival, but as also influenced by broader structural processes. There is implicit recognition here for the dialectic relationship between humans and the environment – i.e. that humans are influenced by their physical environment, and in turn shape it through a range of mechanisms. There is also a recognition of the links between broader structural – political and economic dynamics – and the environment.

Yet both political and ecological analyses are criticised for being over-deterministic, and leaving little space for the role of individual agency in shaping either the environment or the broader "structure" seeing human society and culture as a function of either physical or structural factors (Ortner 1984). It is at this juncture that we again see the emergence of post-modern theory, which recognises the roles of "power and voice, subjectivity and dialogue, complexity and critique" (Lassiter 2005: 91), and calls into question extant categories and paradigms of social analysis. Escobar explains: "By emphasizing the historicity of all existing and imaginable orders, anthropology presents dominant modern orders with a reflection of their own historicity. The notion of the 'West' itself becomes radically questioned" (Escobar 1997: 497). Both anthropological and ecological practices and discourses came under

scrutiny as not mere purveyors of scientific truths, but products and agents of socio-historical processes associated with colonialism.

Analyses in anthropology came to focus on "practice" (Ortner 1984) and "actor-network" theories, which postulated how human interactions came to form social structures, and how networks of individual actors and their interactions brought about particular discourses and networks of power, and vice versa. A second theoretical current focused on how culture and structure are conceived of and operationalised, particularly within the context of the relationship between knowledge, power and domination (Ortner 1984: 147). So, we see a turn to focus on discourse, narrative, and social networks, and how these can operate to entrench or transform existing social relations.

Given these theoretical developments, we see in anthropological theory a questioning of established "truths" – such as the analysis of anthropological, scientific, development or environmental discourse, as well as increasing recognition of cultural dynamism and the dialectic between "human agency" and broader shaping "forces". Indeed, this perspective has been taken in anthropology in more recent permutations of political ecology, which "mirror more general changes in anthropology: the shift from research focusing on a single community or 'culture', perceived as more or less isolated and unique, to recognising pervasive linkages and concomitant flows of people, technology, images, and information, and to acknowledge the impact of differential power and status in the post-modern world on local entities" (Kottak 1999: 25). We also see shifts in anthropology in its focus on environmental issues in terms of discourse and power.

Anthropology and Environmental Social Movements

This critical self-reflection that developed within anthropology with the cultural revolution of the 1960s that followed decolonisation has been central to anthropologists' growing interest in environmental issues. This has occurred not only in actual relationships between humans and their environment, but also in the ways that people commune around a notion of environment. It was during this period, too,

that anthropologists - following social psychologists - took an interest in social movements as a social and cultural phenomenon and as part of a broader social trend towards questioning the status quo. Indeed, environmentalism presented itself at this time as a significant permutation of social movement. What shall become clear from the arguments below is that various forms of environmentalism and environmental social movements employ ecological concepts and thinking that imply particular kinds of human-ecological relationships and behaviour around that. What also becomes evident that environmental concerns are by no means new.

Social movements as an academic theme emerged as the movements themselves became significant features of society across the globe from the 1960s onwards. Social movements theory (SMT) developed in social psychology at this time (Oliver *et al.* 2003: 213-214), followed soon after by anthropology. SMT has shifted its focus from understanding causes and effects and political efficacy in social movements, to the interactions between actors, new forms of protest and protesters (including transnational dynamics), the knowledge they leverage towards their causes and produce in them, and their often anti-neoliberal stances (Kox and Nilsen 2007).

As Casas-Cortes *et al*. (2008: 17) indicate, social movements are not just sites of political engagement but also knowledge-production, and it is through a focus on "knowledge-practices" that insight into a social movement's politics can be gained (Casas-Cortes *et al.* 2008: 217). It is thus in everyday practices where knowledge is utilised and generated that social movements - their politics, discourses, social dynamics, histories and trajectories can be better understood. This suggests a potentially strong role for anthropology to play in understanding social movements, with its traditional interest in knowledge, history, genealogy, and practice.

A number of social movements theorists point out the ways in which anthropological methods and approaches could thus be utilised: through the collection and analysis of cultural artefacts and actions, like texts images, media, protests or marches (Casas-Cortes 2008: 48). The collection of narratives and their analysis - established anthropological approaches - can be used to understand the ways knowledge and facts are drawn upon to forge identities, reveal movement trajectories and establish "truths" and discourses (Poletta 1998: 419-420). The analysis of social movements, their

discourses, knowledge and practices reveals not only information about the social movements themselves, but also the dominant discourses they claim to resist, and alternative discourses and possibilities for social action they propose.

Four particular anthropologists' perspectives are consulted here to bring together the divergent but inextricable strands of ecology, history, politics and geography with the finer details of cultural practice, and suggest a role for anthropology in the understanding of contemporary environmental social movements : Escobar (1997; 1998; 1999; 2004), Agrawal (1997; 2005), Milton (1996), and Tsing (2005).

Milton (1996: 27) focuses distinctly on the “concern that the environment should be protected, particularly from the harmful effects of human activities”, termed “environmentalism”. This is considered a feature of industrial society (Milton 1996: 23). “Environmentalist” is the term used for a person that seeks cultural and social change in the way that others and themselves “understand, use and value their environments” (Milton 1996: 23). Just as there are different ideas about what constitutes the environment, or nature, there are different expressions of environmentalism. With them come various ideas about what the central environmental concerns are and the definition of environmental problems, depending on their political context (Milton 1996: 81) and, I would argue, their environmental context. Certainly, environmentalism as an overt concern with environmental issues facing society is not a new phenomenon. Historically, it has been primarily a state concern (Grove 1995). Like emergent environmental problems, contemporary environmentalism as a global social phenomenon has been unprecedented.

Environmentalism is no longer the preserve of the state, and according to Milton today can take the form of ideology and social movement. As ideology, it can represent “a vision of a complete alternative society, a 'post-industrial' and 'sustainable' society” (Milton 1996: 83). As a social movement, environmentalism becomes trickier to identify: Milton defines a social movement as more than a social trend or protest, but less organised than a political party, and representing the potential for social transformation (Milton 1996: 80).

As such, social movements offer models of change to mobilise people towards a particular cause (Tsing 2005: 214). These models of change may entail the definition of problems, and the negotiation of movement goals, objects and meanings (Tsing 2005: x) – all of which rely upon the utilisation and dissemination of various forms of knowledge. According to Tsing (2005: x), social movements are framed either as an expression of controlling global capitalism or resistance to that. As Milton argues that just as environmentalism is a feature of industrial society, so too must be contemporary social movements be a feature, and indeed product, of contemporary global dynamics associated with neoliberal capitalism.

In the case of newly emergent social movements, Escobar (2004: 10) notes that they represent a departure from centralised hierarchical forms, instead, displaying characteristics of self-organisation, complex adaptive behaviours that are at once place-based and transnational. These characteristics are in part facilitated by new information and communication technologies that are integral to processes of globalisation. Escobar sees emergent social movements similarly to Milton and Tsing, in the sense of being the product or corollary of colonialism that entailed the suppression of "subaltern knowledges" (Escobar 2004: 210).

These somewhat broad characterisations of social movements, as Milton points out (1996: 80), do not make them readily identifiable. Yet such definitions also allow for a diversity of perspectives and social movements to be recognised (Tsing 2005: x), which, according to Escobar might be found in the politics of emergent social movements and the alternatives they propose (Escobar 2004: 210). In the context of environmentalism, then, anthropologists with an interest in such social movements seek understanding of the ways in which people mobilise around a concept of environment – how they define environmental problems and causes, how they organise themselves, and how knowledge is communicated, utilised, acted upon; and the relationship to the politics and economics of processes of colonialism, industrialisation and contemporary global capitalism.

Milton argues that anthropologists might contribute to addressing environmental concerns by redefining them as cultural rather than simply ecological or material (Milton 1996: 13). This is because a concern for the environment reflects people's

understanding of the world, although this does not necessarily constitute a “culture”. Environmentalism can emerge in different cultural contexts, which themselves are altered by processes of globalisation: “they lose their tries to particular societies or groups” (Milton 1996: 217). Refiguring environmentalism as cultural allows for a role for an anthropological contribution to approaching environmental issues, but one which would require a consideration of global economic, political and social dynamics.

For Milton, seeing anthropology fundamentally as the study of culture as a medium for human engagement with the environment means that it is the study of human ecology (Milton 1996). These understandings of environmentalism and anthropology suggest what anthropology's contributions might be to environmental debates: identifying models for human-environmental relationships and their features which might or might not be sustainable; cultural expressions of environmental care; arguments for environmental protection; and to help “define our environmental responsibilities and work towards their fulfilment” (Milton 1996: 65).

These anthropologists display a concern that new models for human-environmental relationships do need to be sought that provide an alternative to the visions and models set forth by notions of progress and development that are thought will be effected by the application of science, technology and neoliberal economic instruments and policies. But how does one approach the questions that they raise and the roles proposed for anthropology? It would appear that the authors largely agree that a focus on environmental discourse and practice might be the best route for anthropologists.

Milton suggests a focus on discourse in understanding the environment as a cultural perspective, in terms of contemporary environmental social movements. She chooses a definition of discourse that sees it as “an area of communication defined purely by its subject matter” (1996: 167). A focus on discourse in this way does not limit the inquiry to the apparent boundaries of culture, which is apt in the study of environmentalism and social movements that are tied to global processes and are increasingly transnational and transcultural (Milton 1996: 170). The role for

anthropologists thus becomes to identify discourses about the environment and human relationships with it, and to seek out sustainable practices emerging from them.

Escobar calls attention to “articulations” between biology and history that each have their own “history and specificity and [are] related to modes of perceptions and experience, determined by [the] social, political, economic” (Escobar 1999: 4). Such confluences between the personal, historical, political and economic processes and factors he refers to as “regimes of nature” (1999: 5). Tsing uses the term “universalisms” to describe claims about the world and truths that are defined as universally applicable (Tsing 2005: 6, 7). “Universalisms” she explains are generated through the generalisation of knowledge and areas of agreement negotiated between actors such as scientists, economic reformers and social justice advocates to constitute “truths” about environment, nature and the globe (Tsing 2005: 6, 89-90). These universalisms, their establishment as truths, their negotiation and movement, Tsing advises should be the area of ethnographic inquiry for environmental anthropologists with an interest in social movements in the arena of global connection (Tsing 2005: 7, 13) because they have real world effects: people act upon them.

Agrawal asks the question, “[w]hen and for what reason do socially situated actors come to care about, act in relation to, and think about their actions in terms of something they identify as 'the environment?’” (2005: 162). In a similar vein to the authors mentioned above, he suggests that concepts about the environment are less tied to static social categories, be it culture or gender or caste, than to the negotiations and interactions between actors, and in particular, the state (Agrawal 2005: 168) – what he refers to as “environmentality”. Important in this case are both beliefs and imagination about the environment (the conceptual) and broader structural dynamics. As Escobar argues, ideas about or “regimes” of nature are socially and historically produced. Rather than being essential or static, they are mutable and contingent. Tsing agrees: they are “hybrid, transient and involved in constant reformulation” (2005: 9).

What these authors seem to agree upon is that discourses about the environment and nature are produced through social engagement and the exchange of knowledge and ideas, be it between actors within a movement, or between individuals and the state. As indicated earlier, very often environmental social movements constitute a reaction

to undesirable aspects of industrial society or neoliberal economics. As Agrawal indicates, although discourses and analyses of them might make them seem oppositional, they are rather mutually constituted. And, as Tsing points out, that while these discourses or universalisms represent an attempt to establish themselves as universal truths, they are actually contingent, they travel the globe and in the process forge global connections (2005: 9). Our attention, then, is drawn to those connections, to seeking out the "mutual articulations" and contradictions between actors and discourses (Escobar 1999). Collaborations between actors and how they negotiate truths and differences are highlighted by Tsing (2005) as the locus for identifying such discourses and understanding the broader dynamics that influence them.

She refers to these as "frictions", which she says emerge between say, universalising globalist discourses of the environment and those sites where global capitalism manifests in unexpected or unintended ways. Effectively, what Tsing argues is that no one environmental discourse is complete, and it is when discourses come into contact that their limitations emerge and the space for new ideas, imaginaries and possibilities can be realised. Moreover, fixed ideas about what constitutes the environment and appropriate environmental intervention, she argues, may make it difficult to recognise other ideas of what constitutes nature and appropriate behaviour in relation to that. She gives the example of contemporary conservation and development which see "the proper demarcation of spheres of humans and non-humans, culture and nature", and which may "assume that a good livelihood requires permanent fields just as a healthy forest requires permanent reserves" (2005: 175), and thus seeing other forms, such as Indonesian Meratus forests where her research was conducted as a "weedy social ecological roadside" that then become "the least interesting ecologies and societies so long as we are looking for clearly demarcated communities of plants or people. We only see degraded spaces: weeds and hillbillies. But what if we turn our perspective to give careful attention to the making of this species-diverse but social landscape?" (2005: 175). These kinds of varying perspectives of the environment and what constitutes "good" environmental practice will vary between places and people, and it is these perspectives that we are called to identify and analyse.

Coming to the fore alongside discourse that informs them are practices. For Agrawal (2005: 162), the relationship is dialectic: ideas about the environment not only

influence how people act upon it but the practices and engagements between actors also generate discourses. It appears, then, that discourses – and what Milton calls "cultural perspectives" of the environment (like culture itself) - are being constantly reformulated and reproduced through their enactment and through social engagement. Indeed, Escobar calls attention also to the "politics of difference" between regimes of nature as sites where anthropologists can begin to identify alternative ideas and where sustainable practices may show up.

The primary contributions these authors' works suggest that anthropologists can make to environmentalism appear to be the following: to identify discourses (including beliefs and the construction of knowledge and truths) that environmental movements base their actions on. In the process, we are also able to identify some of the material and social consequences of such discourse, whether or not they are based on "fact" or "fantasy". Through comparison and autocritique, it may become possible to see that there is not just one solution to environmental problems: solutions will be context-relevant. Moreover, they are not so much universal as socially-produced. In the process of identifying such discourses, we are able to document and help sustain a diversity of cultural practices which might or might not be sustainable in different contexts. And, we can identify similarities and differences between cultural perspectives as a means to find common ground for action, as well as identify internal contradictions of various discourses.

Progress, Development, Globalisation, Neo-liberalism and Environmentalism

Both development and globalisation are seen as foundational to global environmental discourses (Milton 1996) that propose particular visions for human development and human-ecological relationships, whether in the form of a Western-oriented notion of progress and development, or a reaction to that in the form environmental social movements. These are important to elucidate because few of the social movements theorists seem to clarify just what social movements are seen as an alternative to when speaking of dominant discourses, neoliberalism, "hegemonies" (Cox and Nilsen 2007: 424) or "New World Order" (Casas-Cortes *et al*. 2008: 246).

Escobar (1992, 2004) argues that contemporary development is rooted in a concept of modernity that emerged with Enlightenment philosophy that set “man” apart from and above “nature”, and espoused notion of continual human development and progress of a particular kind. The development of this philosophy emerged alongside the foundation of objective, replicable scientific practice and theory, the Industrial Revolution, the rise of the nation-state, and the appropriation of common practice by expert science and the state. Development, according to Escobar (1992: 22) is “firmly entrenched in Western modernity” and that is “about paving the way for the achievement of those conditions that characterise rich societies: industrialisation, agricultural modernisation and urbanisation” (Escobar 1992: 24-5). In its contemporary permutations, development implies and includes “[i]ndustrialisation, family planning, the 'Green Revolution', macroeconomic policy, 'integrated rural development' and the like” (Escobar 1992: 24).

Agrawal (1997: 466) similarly identifies narratives of progress, development and enlightenment in colonial, development and contemporary conservation practice. He argues that although these discourses emerged at different times, they share a consistent way of thinking about human and ecological change. Like Escobar, Agrawal argues that colonialism, development and conservation practice all rest on a particular “logic of progress and teleological reason” (Agrawal 1997: 474). This logic, he argues, is one of order and reason, and is imposed upon nations and lands, leading to a “domination of nature by reason” (Agrawal 1997: 474), and where reason is equated with “moral and material progress” (Agrawal 1997: 474).

Milton identifies a similar arrogance in sustainable development discourse, which proposes that development is intended to addressing global poverty, which itself is seen as a major cause of environmental degradation. The discourse holds that by bringing about development while reducing energy consumption and waste production both poverty and ecological degradation can be solved. Again, the development is to be driven by Western nations who would supply the expertise and technologies to reduce poverty and improve natural resource usage at the same time, since poverty is seen as a major cause of ecological degradation (Milton 1996: 186). And development, which is largely framed as economic and in terms of Western notions of progress, is posited above environmental concerns.

Between these various perspectives emerging in discourses of development, progress, conservation and sustainable development is the idea that the future of human society should be ideally a Western industrial version. Agrawal points out the colonisation of lands and minds that have accompanied the enactment of development worldwide (1997: 463). Escobar describes it as a form of global imperialism constituted by an "economic-military-ideological order that subordinates regions, peoples and economies worldwide … a capitalist system – a global empire led by the USA – that seems more inhumane than ever … a new global market-determined economy that commands … the world to be organised for exploitation" (Escobar 2004: 208). He casts contemporary global politics and development as a US-led form of global coloniality instituted not so much through the state but rather driven by transnational capital interests. From the above discussions, it would appear that development discourse and practice is closely tied to the application of western science and technology, and neoliberal or free market economics.

Escobar is not alone in his critique of contemporary neoliberal development. A range of other authors draw attention to the promises of neoliberal economics and the problem of seeing them as a golden hammer for addressing local social and environmental problems with global solutions determined by multinational actors. At the same time critiques have emerged which challenge the notion of neoliberalism as a convenient but poorly defined term to which the world's problems can be ascribed. Some attention to the term, and its relationship with development, is helpful here.

Boas and Gans-Morse (2009: 137) challenge the legitimacy of some critiques of neoliberalism, in that the term is used without adequate clarification, has become a "catch-phrase" that is very broad in its definition, and is not used in a consistent manner. The term is associated with economic policies, development models, ideology and academic paradigms - which are seen as distinct phenomena although they are interconnected.

Hartwich (2009: 4) similarly argues that neoliberalism represents a "broad umbrella under which very different groups with various points of view can meet" but remains poorly defined. He returns to the original ideas associated with neoliberalism, which

called for state regulation of capitalist economics and the regulation of business in a way that avoided the concentration of wealth in the hands of a few large companies, and the subservience of people's needs to economic needs. For Hartwich (2009: 24), the core principles of neoliberal economic theory are that it "emphasised the importance of sound institutions such as property rights, freedom of contract, open markets, rules of liability, and monetary stability as prerequisites for markets to prosper and thrive". These features of neoliberalism appear to represent an ideal form of free trade. However, from the perspective of authors such as Escobar, these ideals for achieving social prosperity – the valorisation of private ownership and the liberation of trade – are imposed through particular mechanisms by multinational institutions through governments. They inhere a particular idea of how progress should be achieved, and what progress means. Escobar's critique, it appears, rests not so much with the ideals of neoliberal economics but the ways in which they are enforced across the globe, and the kinds of consequences the adoption of neoliberal economic policies and the privatisation of traditional state functions that favour capital accumulation for private companies rather than social benefits – take effect in people's lives and the environments they occupy.

Escobar appears to respond to some of these issues, calling attention to the identification of alternative economic forms that are not necessarily geared towards a fiat profit motive, and the commodification and exploitation of traditional knowledge. Certainly, Escobar appears to see the global development as instituting a common market system that participant nation-states are subject to as a consequence of particular trade and debt-servicing agreements in the form of structural adjustment programmes and bilateral trade agreements. Indeed, Escobar himself argues that "development" through a theory of neoliberal economics has failed to bring about its ideals, and worse, has brought about for many people and nations, negative effects.

The problem is that development has not delivered the "minimum of well-being for the world's people" (Escobar 2004: 209), but instead has brought about ecological destruction and involved "brutal internal wars and massive displacements to free up entire regions for transnational capital" (Escobar 2004: 214), and increasingly violent "regulation of peoples and economies" (Escobar 2004: 209).

Development thus acts as an instrument of control and, through its imposition of a Western vision of progress, precludes other ways of seeing, as Agrawal (1997) puts it, colonising the imagination. Rather than being emancipatory, it becomes an "oppressive globality" and a form of "social fascism" (Escobar 2004: 209) in Escobar's eyes. He argues that these symptoms cannot be addressed through the culmination of neoliberal globalisation, and need to be addressed from beyond the paradigms of development and modernity that produce them – and indeed, in those sites of knowledge and practice suppressed by coloniality, and within social movements.

It is at this juncture that the relationships between development, globalisation and new social movements become more evident and significant. Milton suggests that globalisation provides a fruitful framework for thinking about environmentalism and social movements, and identifies three useful models of globalisation: a world system of politics and economics; a process associated with modernisation that engenders particular social conditions linked to global institutions, and as a process of the globe becoming a single place (Milton 1996: 143). Development as delineated above is facilitated through processes of globalisation and accelerated through technologies of communication and transport. And, global environmental discourse including that represented in development is itself globalising, as it links individuals, communities, governments, corporations and non-government organisations (NGOs), and itself contributes to the intensification of global relations (Milton 1996: 171). For anthropologists of environmentalism and connected social movements, when they are seen as cultural perspectives, the question arises: what becomes of culture when places on earth become interconnected through particular politics, economics and social conditions that are institutionalised at a global scale? What is the significance of processes of globalisation – political, economic, social and technical – to emergent social movements? And how do social movements participate in globalisation and themselves contribute to globalising discourses?

Environmentalisms of the Globe: Regimes, Universalisms and Cultural Perspectives

In the context of development and globalisation, different environmental narratives emerge – "regimes" (Escobar 1999), "universalisms" (Tsing 2005) or "cultural perspectives" (Milton 1996) of nature. Development and progress as western philosophical constructs and economic goals imply certain kinds human-nature relationships, conceptualisations of ecology, environmental problems and their solutions.

Tsing, Escobar, Agrawal and Milton suggest a globalist and globalising conceptualisation of nature and environmental problems that is linked with the history of colonialism and contemporary development. What Tsing refers to as "Global Nature" she explains is based on knowledge about nature that has been derived from the colonies. Initially, she explained, this local knowledge was documented, categorised and ordered by nascent colonial botanists into a "universal system of classification" (2005: 90) and established as scientific knowledge about the environment and people, and how it should be managed. It was also through particular social networks, collaborations and relationships – often exploitative – that the knowledge was generated and instrumentalised to manage landscapes and their inhabitants (Tsing 2005: 94). This process of establishing a body of knowledge about nature emerges as a particular historically and socially produced "universalism".

Escobar similarly links contemporary biodiversity conservation discourse to colonial exploration and empire-building, which he describes as a "discursive invention of recent origin" (1998: 53) that is produced and fostered now by networks of actors – NGOs, scientists, prospectors, local communities and social movements (1998: 53). Biodiversity conservation discourse, which he refers to as a "globalocentric perspective" (1998: 56), does not introduce a new object of study, he argues. It is concerned with well-described entities related to natural complexity that includes "plants, animals, microorganisms, *homo sapiens*, and their interactions, attraction and repulsion, co-creations and destructions" (Escobar 1998: 54). But, he argues, it introduces a new way of responding to the perceived threats to human survival in the form of biodiversity loss associated with habitat loss, "alien" species and the fragmentation of habitats. Prescriptions for curbing biodiversity loss (and thereby

ensuring human survival) include “conservation and sustainable use of resources at the international, national and local levels; and it suggests appropriate mechanisms for biodiversity management, including scientific research, in-situ and ex-situ conservation, national biodiversity planning, and the establishment of appropriate mechanisms for compensation and economic use of biodiversity resources, chiefly through intellectual property rights” (1998: 56). This discourse of biodiversity “articulates a new relation between nature and society in global contexts of science, cultures and economics” (Escobar 1998: 55).

Agrawal (1997) also argues for the prescriptive nature of biodiversity conservation as a globalist and globalising environmental discourse. In his view, the discourse holds ultimately that state policies and population growth in tropical (non-Western) countries where most of the world's biodiversity is located pose the greatest threats to biodiversity, and they lack the capacity – material or intellectual – to conserve it. It is therefore the responsibility of Western nations who do possess the knowledge to conserve biodiversity and prescribe to others to do the same (Agrawal 1997: 472). He contends that the discourse becomes a colonising agent through the establishment of nature reserves, enclosure of genetic resources through patenting and via a perceived scientific capacity to generalise, predict and control nature.

What emerges between these overlapping perspectives of globalisation, development and environmentalism is a global discourse that has emerged around environmental management that is driven by international bodies and actors. It is built on ecological scientific knowledge that developed alongside colonialism and the relationships between the colonised and the Western nations that colonised them; and it is tied to notions of human progress and development which posit human economic needs above those of the environment. The discourse recognises global interconnectedness of ecological systems and proposes global solutions to ecological problems largely conceived of as biodiversity loss and associated primarily with lack of progress in developing nations. The overarching solution in this paradigm is to apply political, economic and scientific instruments to achieve development and ecological sustainability. Historically-produced scientific, economic and political perspectives come together to guide ecological problem-solving.

In discussions about global and globalising narratives of nature that are associated with industrial economies what emerges is what Escobar refers to as "regimes of nature": ways of conceptualising human needs and relationships with the environment, increasingly with nature as subservient to the needs of the economy and to be managed through economically (and politically-driven) instruments. Tsing (2005) agrees that the global regime of nature under discussion above, what might be termed conservative environmentalism, or globalocentric nature, is but one notion, one way of imagining human-ecological relations. It is implied and argued that we need new visionings that disrupt the undesirable or problematic features of a "Global Nature".

As Escobar points out, however, these "regimes" or notions of nature are not mutually exclusive. They are the "result of discursive articulations … that take place in an overall field of discursivity wider than any particular regime" (Escobar 1999: 5). These "regimes", Escobar argues, do not represent different stages of evolution but rather coexist, overlap and co-produce each other.

Milton similarly indicates that different kinds of environmentalisms may make use of common notions of ecology, for example, but represent different relationships between society and nature, and imply different sorts of politics. "Conservative environmentalism" advocates for accommodating environmental issues into the existing political, economic and social structures of industrial society, while "radical environmentalism" advocates the transformation of those structures (Milton 1996: 74). The former perspective does not require significant social transformation of industrial society, and therefore does not constitute a social movement, according to Milton. The latter means a "fundamental change in the way we understand our relationship with nature; it requires us to see ourselves as one element in a complex ecological system, rather than as the centre of the universe" (Milton 1996: 76). She suggests, however, that these approaches are not internally homogeneous, which can "shift in quite subtle ways, from one analytical perspective to another, or even within a single analysis" (Milton 1996: 74).

As Milton suggests, it is possible that knowledge about nature in the form of "ecology" "as a body of science is amenable to different interpretations … it is seen both as a route through which human management of the environment can be

improved, and as the basis for an alternative vision of our relationship with the rest of the world (Milton 1996: 75-6). What both Escobar and Milton suggest is that understandings based on apparently objective science can thus be interpreted and put into practice in very different ways, and imply quite different forms of politics.

Milton (1996: 188) identifies two discourses about nature alongside globalist notions that share a concept of ecology but imply different kinds of human-ecological relationship, which she refers to as antiglobalist and ecocentric. The antiglobalist environmentalist discourse that has emerged in reaction to the increasing global regulation of local places and their natural resources challenges the primacy of globalisation, coordinated international management of the environment and economic integration. Instead, this discourse privileges the local as place, and local natural resource management driven by community groups and NGOs.

For Milton, the two perspectives share an aim to achieve the satisfaction of human needs without damaging the environment "through democratic means", but their interpretations of democracy differ. In the globalist perspective, it means participation in a global economic system with "an agenda set by the global agencies" (Milton 1996: 195). In the antiglobalist it means self-determination - people decide for themselves what the objectives should be. The former favours homogeneity rather than diversity, presenting a problem for the aims of conservation that sees biodiversity as the key to environmental sustainability.

A third environmentalist perspective she identifies is 'ecocentric' and includes a reconfiguration of humanity's location in the bigger scheme of "an ecological system rather than the centre of the universe" (Milton 1996: 206) versus the first two, which emphasise the utility of environments to humanity. Ecocentrism, like the antiglobalist perspective, provides a critique of industrialism. Milton (1996: 210) suggests that there might be some compatibility between the two, in the form of the "ecocentric vision of an ideal society" - a bioregionalism that envisions harmonious human-ecological communities occupying distinct ecosystems.

It is in the articulations between these notions of human-ecological relationships and different enactments of a concept of ecology or biodiversity (what might be termed

"nature") - between "global forms of power" and "place-based worlds" - that Escobar (2004: 20) suggests we seek alternatives to notions of development and biodiversity conservation that are tied to imperial globality. He calls for a focus on the politics of difference. Escobar directs our attention to emerging discourses that employ biodiversity knowledge and concepts to different ends besides economic purposes that are tied to Western notions of progress and regulation – in Third World perspectives, biodemocracy and social movements (Escobar 1998: 61) and in "those subaltern knowledges and cultural practices world-wide that modernity itself has shunned, suppressed, made invisible and disqualified" (Escobar 2004: 210).

Environmentalism and Subaltern Knowledge

As the above discussions show, discourses about nature are socially and historically produced, through long-standing social relationships and interactions between people. They are also developed out of different sorts of knowledge about the environment which itself is socially and historically constituted. Tsing (2005) argues that when we wish to make sense of the ways in which universals are constructed and function, we need to also consider the knowledge that is drawn upon. What a number of these authors suggest is the need for alternative readings of nature, and alternative sources and application of knowledge. It is suggested these are to be found in sites of suppressed knowledges and practices, or "indigenous knowledge" systems: anthropology's traditional mainstay. Paradoxically, it is also "indigenous knowledge" about the environment that has has informed Western ecological perspectives such as biodiversity conservation.

Milton (1996: 205) refers to the valorisation of indigenous knowledge as providing solutions and alternatives to a globalist notion of nature as the "myth of primitive ecological wisdom". It is a myth, she explains, that sees non-industrial societies as inherently benign towards nature and which "do not idealize growth or aim to maximise their material consumption" in comparison to industrial societies that epitomize the "idealization of growth" and "consumption patterns that sustain growth, that help to support an environmentally destructive economy" (Milton 1996: 139). Milton cautions, though, that this idea that non-industrial societies hold the keys to

sustainable and ecologically-benign human relations with nature might not be entirely accurate. And, when such knowledge is seen as valuable, Escobar points out, it can be misused or misapprehended, particularly when it is "refunctionalized to serve the interests of Western-style conservation" (Escobar 1998: 61).

Milton argues that it remains important to assess this myth because it is significant for humanity's future on the planet, because if it is true that the solutions to the flaws of industrial society are to be found in non-industrial societies' "alternative ways of living", then it will "be important to select alternatives that are genuinely benign towards the environment, and not just held dogmatically to be so" (Milton 1996: 30). Given anthropology's long-standing interest in "indigenous" society, it would seem well-positioned to assist in this inquiry – not just in terms of identifying indigenous knowledge, but also probing the utilisation of the concept of "indigenous".

Tsing also problematises the category of "indigenous", explaining that what are thought of as "indigenous people" and "wild nature" are conceptualised in opposition to and separate from modern landscapes" (Tsing 2005: 160). Often what is seen as indigenous does not necessarily exist in reality or is inaccurate, and people seen as "indigenous" or places as "wild" are not timeless relics representing some kind of pre-industrial ideal, but are products of particular histories and social and environmental dynamics.

Milton's (1996: 222) discussion suggests that while anthropology's refutation of this myth suggests there is no necessary inclination in humans not to be destructive towards our environments, it does not mean that environmentally benign cultures do not exist, or that we should abandon the search for more benign practices and beliefs. However, we cannot simply assume that all non-industrial societies imply living in harmony with nature. There is value in exploring the diversity of human ecological relationships in order to identify ecological wisdom but it is naïve to try to find the one solution for all situations. Rather, we should consider the ecological wisdom that emerges from "the range of possibilities and understanding of how human cultures and the environments in which they develop impact on each other" (Milton 1996: 222). This argument highlights the importance of understanding ecological knowledge/wisdom in the context in which it emerges, and what it would mean to

apply that knowledge in a different context. Such an evaluation might not be entirely within the scope of anthropology, and hence the importance of a multidisciplinary approach.

Yet these cautions do not devalue the insights offered by local perspectives on biodiversity and human-ecological relationships. Rather, they present an "alternative view of development and social practice through a self-conscious and localized political strategy" (Escobar 1996: 62). Tsing argues that such imaginings of "other natures" provide visions of the world besides just "modern landscapes" implied by a "Global Nature" associated with Western science. What they represent is important: "the protest embedded within them" should not be relinquished because they hold some utility, even if they are based on inaccurate representations of reality (Tsing 2005: 160) - they present possibilities including "collaboration across cultures to preserve the variety of nature. The alternative fantasy, a falsely uniform modernism, is much worse" (Tsing 2005: 160). It becomes important, then, to explore different versions of nature, different universalisms, people's expressions of them, and collaborate in our plastic visioning of nature and the world. Such utopian models of nature and utopian social movements, even when not victorious, "keep alive our sense that the forms of hierarchy and coercion we most take for granted can yet be dislodged" to "rattle the hegemony ... [of] suffocating development initiatives" (Tsing 2005: 206) .

By definition, social movements and environmentalisms seek alternatives to problems associated with industrial economies, globalisation, and neo-liberal economic practices that are understood to bring about both social and environmental dis-ease. Anthropology takes as its point of departure culture, which is tied to environment both omission, in theory and in practice. This interest has been extended to social movements and environmentalism as both have changed, and as the discipline has grown in response. Environmental anthropologists take an interest in the way that environmental discourses are constructed and acted upon by activists, the ways that different forms of environmentalisms and discourses come into being, and in identifying alternatives to the kinds of solutions enacted by dominant actors in policy and industry at a global scale. In the discipline's desire to make sense of the historical and social constitution of cultural practices, and in particular environmentalism, and

in its efforts at self-reflexivity, the roles of colonialism and imperialism, and the dominance of Enlightenment philosophy in Western academic discourse that informs much environmentalism, have been given rigorous attention. Race is implied through the highlighting of a Western or European bias, but seldom directly addressed in the body of environmental anthropological theory. It also seems to be largely overlooked in the social movements literature except when referring to particular race-oriented environmental movements like the Environmental Justice Movement and Solidarity Economy which I discuss in a later chapter.

That race has received little attention in these bodies of theory might be a function of their northern-oriented academic constitution, as well as a lack of recognition within the broader environmentalist movements of the role of race in the constitution of their discourses. That I only came to include race as an afterthought in my own work might be a function of my own ignorance of the salience of race in environmental movements as a person categorised as "white" writing in post-apartheid South Africa. I return to this last issue in the following chapter.

South Africa's colonial and apartheid history that produced a society now seemingly defined by race categories that correlate broadly with class suggests that to ignore race in the context of environmental movements would be a major oversight. It is an ubiquitous factor in this society, and I attempt to succinctly introduce some of the issues raised in whiteness studies that have emerged as significant in this study of permaculture in South Africa, and environmentalism more broadly, and which have come to inform the analysis of my research findings.

Whiteness Studies in the Southern African Landscape

The society that people incorporated as citizens into the South African state remains defined by the racial categories acted upon under colonialism and enforced through apartheid laws. While a "new" government has developed new laws and policies to bring about a non-racial and equal society, as Posel (2001: 109) argues, race - as the basis for class, status and economic standing – is " still writ large in the everyday life of the citizens of the "new" South Africa … it remains the norm for articles and letters

in the press, reports on radio and television, and other modes of conversation and commentary to identify social actors in racialized terms, attesting to the lingering salience of these racial constructs within social consciousness". Seekings (2008: 4, 21) explains how "whites" and "blacks" (including other race categories established by the apartheid state, like "coloured" or "Indian") were differentially advantaged and disadvantaged by the system that was designed for "white" political, cultural and economic supremacy.

The continued myopia of the "pale-skinned native" in post-apartheid South Africa narrating tales so blinding in their "whiteness" to the political, historical and ideological domination by "whites" over other peoples in South Africa, and the benefits that have accrued to "white" people in South Africa as a result (Simoes Da Silva 2005), has been attributed in part to the political and ideological processes and notions embraced by post-apartheid politicians and public figures, like the Truth and Reconciliation Commission, and the notion of the rainbow nation (Gqola 2001: 102).

Gqola (2001) suggests that the obfuscation of white privilege that may be found in the formulation and execution of personal ideologies by white people, or the kinds of narratives that Simoes Da Silva (2006) refers to, need to be understood as generated from within the ideologies and practices in the institutions that white people are born into and grow out from.

This wilful or unconscious ignorance of history and the attempt to establish and act upon individual ideals in a way that obscures a persistent history of inequality that benefits people with white skins that Simoes Da Silva (2005) describes is one dimension of what is referred to as "whiteness". Slocum (2006: 524-5) introduces "whiteness" as

> an embodied process in the constellation of race. It is versatile and spread unevenly. It is a "location of structural advantage" and involves cultural practices that have come to be understood as normal. Whiteness has been explained as something achieved – a grouping that bodies are admitted into yet do not often recognize their admittance or their privilege. Whiteness is not recognized as race and therefore is able to exceed its corporeality …

> Whiteness, a spatial process of engagement with other bodies in different spaces is, moreover, capable of transforming itself over and over. It has progressive, transformative potential in addition to, and sometimes simultaneously with, its more known knack for oppression. Finally, whiteness and brownness need not be seen as existing in constant opposition … Extreme distance from other racialized groups is what whiteness achieves. Paradoxically perhaps, whiteness also builds its own close spaces … Whiteness is created through a dense proximity … through trying to be closer (physically, affectively, in solidarity, in appreciation, in embrace, in networks or in the imagination) to others in meaningful ways …

For Willoughby-Herard the establishment of white identity and whiteness is seen as the creation of a "normalized social identity that has been granted mobility, institutionalized and privileged access to citizenship, class status, a valued cultural and moral ethos, property and wealth, and protected and revered gender and ethnic identities. Most importantly, whiteness has been complicated by its reputed "invisibility," or the capacity to make privileged access look like a natural, neutral, universal, and expected process. The trouble, according to critical whiteness studies scholars, is that whiteness, or white raciality, is generally invisible while it is producing unearned advantage and power" (Willoughby-Herard 2007: 486).

Ansell's (2006) interest lies in the "performance of whiteness replete with new characters, plot lines, settings, and imagined notions of selfhood and other" and "the ways in which contemporary color-blind ideological narratives are linked to and fundamentally shaped by white group position, economic and political interest, everyday experience, and even psychological wages within the context of the current racial order" (Ansell 2006: 339).

For De Kock (2010), "whiteness" in South Africa must by necessity be understood in relation to the establishment of South Africa as a mission outpost replete with extensive missionary activity, and where "white" and "black" bodies were taken as symbols of value and civilisation. "Whiteness", of course, has been long associated with civilisation and constructed in relation to some notion of "wildness"', much in line with binaries of culture and nature. Even the whites who resisted in some way the

orthodoxy of the church and that of "civilisation" - those "people who 'went native,' so to speak, went 'bos' in modern parlance, people who wanted to cross over to a place, which we may want to call the 'wild,' where the rupture of orthodoxy could be defiantly celebrated … [who] felt themselves impelled towards a white counter-life", according to De Kock (2010: 16) helped to define "the paradoxical nature of whiteness, its complicity with wildness".

De Kock (2010: 16) argues that "the resuscitation of a mythic rural domain of yeomanry as a model of the British past, in Africa, becomes a blueprint for the future", a "new Eden in the wilderness", the "symbolic reconstitution of the bare earth". In other words, the yearning for wildness and the creation of a "white counter-life" is by definition constituted in terms of notions of civilisation and wildness always made meaningful in terms of European and Christian notions of civilisation and harking back to a mythical, European notion of Eden. De Kock (2010: 19) implies that this kind of utopianism is constructed out of a universalising notion of "the lure of the untamed life" that props up "the dialectical co-constructedness of whiteness and wildness, the power and the lure of the anti-myth that … lies at the heart of the white counterlife". This desire by white people seeking to defy the white establishment of order and the attempt to "unwhite themselves – to construct a counterlife that is one's own anti-myth" (De Kock 2010: 18) by creating universalising concepts of utopia is "a transparent bourgeois fiction, class interest masquerading as universal interest, the idealist fallacy upheld in the service of political and class domination" (De Kock 2010: 20).

Hughes (2010) work introduces whiteness studies into conservation and land-use practice in the southern African context, and echoes writers like De Kock who argue that whites, in their attempts to find a sense of belonging in the African context, tend to reproduce their own racial and cultural enclaves, thereby perpetuating a form of racism and social hierarchy. Hughes writes specifically about the ways that "white" Zimbabwean citizens constructed identities around nature-loving and the African landscapes they inhabited, and the ways that "whiteness", as described by authors above, operated in relation to their agricultural and conservation-oriented activities. Hughes (2010) provides an account of whiteness in contemporary Zimbabwe as it was enacted and reproduced amongst farmers and nature-lovers there. In this study, he

scrutinises notions of belonging reflected off the African landscape, and racial attitudes and behaviours in that landscape amongst its white inhabitants. He examines the ways in which these white Zimbabweans imagined the landscape and their relationship with it. He argues that the meanings and values these whites imposed on that landscape, and the subsequent practices they developed in it - like conservation and agriculture - were not overtly racist, but rather ignored the presence of black Zimbabweans on it. This occurred through their re-imagination of the landscape - transformed through practices they introduced, like hydrological engineering and commercial farming - as wild, untouched nature. Whites instead engaged in "denial and avoidance" and "turned away from native, African people and focused instead on African landscapes" (Hughes 2010: xi).

Hughes's (2010) study is particularly useful because it deals with the ways that agriculture and conservation are viewed and practised amongst white people in southern Africa. It provides an interesting comparison with some of the findings in my own research, and constitutes some of the sparse contemporary research that analyses practices of agriculture and conservation amongst white people in an African context. Whiteness studies, and the perspectives introduced above, introduce a new dimension to studies of environmental social movements that have been touched upon lightly by environmental historians and social movements theorists (explored in the following chapter).

In the case study I present which focuses on the enactment of permaculture amongst a group of white South Africans and early adopters of permaculture philosophy and practices, participants' ideals appeared to be shaped by agro-environmental necessities like water, by the legal and economic structure it emerged in, by the Eurocentric ideals of romantic communitarianism and ecophilosophies, and also by the deep-running inheritance of race-based colonial and apartheid history and social reproduction that remains fundamental in South African society. As I will show, race does emerge in the work of South African environmental historians, but again, whiteness itself is given little consideration. I return to these discussions that Hughes (2010) and others raise in relation to my research findings, exploring the ways in which permaculture philosophy was enacted amongst this group of predominantly

middle-class “white” people in post-apartheid South Africa, amidst the broader collective of permaculture practitioners in the country.

Authors that deal with the phenomenon described as “whiteness” in South Africa highlight the historical and social specificity of white people’s perspectives and points of view. Environmental anthropologists draw attention to particular environmental perspectives which are taken to be universal but are most often socio-historically constituted. Taken together, these bodies of theory call for close attention to the ecological perspectives that emerge in a nation like South Africa which has been historically shaped around notions of race that have been engineered around class, or vice versa. They suggest that ecological perspectives enunciated particularly out of a “white” social class need to be treated as cultural artefacts rather than ecological facts. I look at these links below.

Social movements theory calls for an understanding of social movements not only in terms of what gives rise to them, and their effects (particularly political), but also a focus on interactions between actors, various permutations of protest at local and global scales, and the knowledge and practices that they engage in. It is understood that a focus on knowledge and practices, through narrative and material analysis, can reveal information about movement trajectories, social dynamics, the discourses and politics they employ, the dominant discourses they claim to resist and the alternative possibilities for social action they imply. Social movements theorists suggest a productive role for anthropologists in their study, with anthropology’s long-standing interest in culture and its production, and there are many overlapping interests between these fields of inquiry.

A useful role that emerges for anthropologists in understanding different forms of environmentalism is being able to identify discourses about the environment and human relationships with it, and to seek out sustainable practices emerging from them. Escobar’s “regimes of nature” draws attention to the dynamics of personal, historical, political and economic processes, and Tsing’s notion of universalisms - claims about the world and truths that are seen as universally applicable - suggest ways in which to approach understanding environmental social movements from an anthropological perspective. They suggest, moreover, that the differences between environmental

discourses and their limitations can shed light on possibilities for environmental action as yet unrecognised.

Anthropologists of environmental social movements provide guidance and raise questions that I have found useful in this research on permaculture practice in South Africa. Their insights have guided my own lines of inquiry and arguments. Based on these ideas, I attempt to address some of the following questions in this research:

In what ways does permaculture represent an ideology and social movement? What kind of vision of society does permaculture propose, and what kind of model for change does the discourse offer to mobilise people to its cause? Where might one locate permaculture in the array of environmental perspectives, from "Global Nature" to "ecocentric", and more specifically in the context of South African social movements? What are the central environmental concerns in permaculture, and how are such problems defined? Who identifies with the permaculture discourse, and how do these people "understand, use and value their environments?" (Milton 1996: 23) What kinds of knowledge are utilised and disseminated, and in what ways? How do adherents of permaculture organise themselves, communicate the knowledge they employ, and how is that knowledge utilised and acted upon?

For anthropologists of environmentalism and connected social movements, when they are seen as cultural perspectives, further questions arise: what is the relationship of permaculture to the politics and economics of processes of colonialism, industrialisation, and contemporary global capitalism? What is the significance of processes of globalisation – political, economic, social and technical – to emergent social movements? And how do social movements participate in globalisation and themselves contribute to globalising discourses? How is permaculture framed in terms of global capitalism, and what is its relationship with contemporary global dynamics associated with neoliberal capitalism?

In order to answer these sorts of questions, anthropologists seek out the discourses employed in social movements, the kinds of knowledge utilised and produced by social movements, and the practices that they engage in. The ideas discussed principally by environmental anthropologists here have guided not only my broader

inquiry in permaculture practice as observed in the South African context, but also the kinds of methods that I employed in this research, discussed in greater detail in the fourth chapter.

Given that anthropologists such as those discussed above frame environmentalism as cultural perspective, the questions begs, *whose* cultural perspective. As will be explored later on in this thesis, much of the permaculture literature was developed and taken up amongst people who would be categorised as "white" were they living in South Africa. In the South African context, race is amongst the most significant factors that shape the society, given its colonial and apartheid history.

Whiteness studies raise additional questions for the study of environmentalism and environmental social movements in the case of permaculture practice in South African - particularly when environmentalism is seen as a cultural perspective. Given the largely white constituency of permaculture practice in South Africa, one might ask in what ways permaculture practice might constitute a normalised discourse amongst its white practitioners that is culturally specific. Taking the lead from Hughes (2010), the ways in which adherents construct their identities and universalisms in relation to the ecologically-oriented discourse of permaculture provides a further line of inquiry. How do participants in permaculture practice imagine the landscape (and people) and their relationship with it? Does "whiteness", as a process of making privileged access look natural, neutral, universal, and expected, operate in the context of permaculture practice in South Africa, and in what ways? Anthropological inquiry into the socio-historical constitution of this discourse and its practice sheds light on the ways that permaculture is presented as a universalising discourse, even while it is culturally specific and enabled by an unrecognised history of racialised privilege.

In the following chapters I have attempted to address the kinds of questions raised in social movements theory, environmental anthropology and whiteness studies as I have presented socio-historical and data drawn largely from environmental history and the permaculture literature, as well as the fieldwork findings that emerged from my practical research.

Chapter 3: Environmental History and Environmentalism in South Africa

Anthropology has displayed an enduring interest in the historical roots of cultural practices. Environmental anthropologists encourage the understanding of different ideas about the environment and the social forms that coalesce around these as products of particular historical, social, ecological and economic dynamics – environmental "universalisms" (Tsing 2005) or "regimes of nature" (Escobar 2004) - and to see these social forms, their discourses and practices as part of a continuum rather than irreconcilable world views and worlds, with continuities and divergences between them, and as having shared histories with particular localised outcomes.

This chapter provides historical and contemporary perspectives on the environment and environmentalism in South Africa, and some background to contemporary environmental issues addressed by the South African state and emergent environmental movements. It sketches out the context within which permaculture practice has grown in the landscapes of South Africa's politics, economics and environment. It provides a basis for the analysis of permaculture's emergence as a social movement in South Africa as part of socio-historical process and amongst an array of other movements globally and locally.

The chapter begins with a discussion of findings from environmental history that provide an avenue for beginning to understand the emergence of particular forms of contemporary environmentalism in South Africa. I draw on some of the more prominent works that have been developed about the region that deal with early conservation practices, the development of environmentalism (Grove 1997a; 1997b; 1995; 1993; 1989, Beinart 1995 and Beinart and Coates 1995) and nature conservation in South Africa (Carruthers 1995; 1994; 1993 and 1989 and Mackenzie 1997). These histories focus predominantly on South Africa's colonial and apartheid history, and provide some insight on past and present environmental dynamics in South Africa, as well as the state, scientific and public environmentalist discourses around these. They show that not only were there early expressions of

environmentalism from the state around resource depletion rooted in scientific theories of ecology selectively used to inform early environmental policy, but also early expressions of resistance to that. While these sorts of environmentalist discourses at first appear exclusive and irreconcilable, closer attention to these histories and environmental narratives shows that the lines between them are more blurred fluid than first impressions give.

Perspectives on late and post-apartheid environmentalism and environmental management in South Africa are then considered. I have drawn from the work of anthropologists in the areas of contemporary conservation practice (e.g. West, Igoe and Brockington 2006, Wolmer 2003), environmental management and policy in South Africa (Bond 2012, 2000; Mittelman 1998; McDonald 1998 and Simon 2002) and environmentalist social movements in South Africa. These latter-day analyses provide perspective on contemporary socio-ecological dynamics in the country, and the social and political responses to them. Both historical and contemporary accounts of South African environmentalism suggest a continuity in past and present practices and dynamics, but also show the changes that have occurred over time. Amongst the more prominent environmentalist discourses that have emerged in South Africa are the "green" and "brown" agendas which foreground different environmental issues. The former perspective, broadly speaking, takes species and landscape conservation as paramount, whilst the latter emphasises urban environmental management as it affects the poorest of the poor in underserviced post-apartheid settlements. These discourses tend to correspond with race and class interests. Contemporary environmentalist movements in South Africa challenge inherited notions of appropriate conservation management, but they especially challenge the political-economic framework that informs it - in this case, a neoliberal approach to environmental and social management. These analyses suggest opportunities for anthropological contributions to understanding contemporary environmentalism in South Africa, and a perspective on permaculture within that.

A Brief History of South African Environmentalism

African environmental history is argued to be the most poorly understood by modern historians (Carruthers 2008: 807). The majority of available analyses appear to centre on colonial and early apartheid environmental dynamics. This may be a result of its relative infancy, and the dwindling interest in South African history more generally since the end of apartheid (Carruthers 2008: 808). The most prominent analyses are those which deal with colonial forest policy and the development of global environmentalism and ecological practice, hunting and disease and the establishment of protected areas. There appears to be a relative dearth of material on environmental history during apartheid.

The contemporary literature on environmentalism and environmental social movements in South Africa is fairly limited – perhaps for similar reasons as its environmental history: it being a fairly recent phenomenon as a broad social movement and its suppression under apartheid.

Environmental historians suggest that different forms of environmentalism have manifest during different political and economic periods of South Africa's history and are most easily associated with periods of colonialism, apartheid and post-apartheid administrations. Environmental dynamics and different forms of environmentalism - state, scientific and public - have shaped the way that environmental problems have been defined and understood in South Africa over time. While often different environmental concerns are understood as being in opposition to each other, the historical contextualisation of environmentalism indicates that the relationships between state and civic environmentalism have been more complex than environmentalist discourses themselves might suggest. Below I consider the periods in South African politics identified as contingent upon the emergence of different forms of environmentalism here.

Colonial Environmentalism in South Africa

Fears about anthropogenic climate change and resultant conservation thinking emerged during the early colonial period in South Africa (Grove 1997a: 5). These changes were initially attributed to the importation of European agricultural methods and drought, although often it was local inhabitants land-use practices that were blamed (Mackenzie 1997: 218). The primary response at first was to support the modernization of settler nomadic and stock post (kraal) farming to then-modern agricultural practices like fencing, rotation grazing and water provision (Beinart 1997: 87).

The global colonial information networks between the colonies and imperial centres influenced the emergence of early permutations of state environmentalism and conservation thinking in the country, amongst these A theory of "dessication" that linked deforestation to decreased rainfall. "Dessication" and climate change theories were favoured and propagandised by "a few learned societies at the metropolitan centre" (Grove 1997a: 5), and these ideas came to dominate state environmental thinking and practice. Other ecological ideas were being developed during the same time, like species rarity, endemism and extinction, but they - like settler agricultural practices - became secondary concerns (Grove 1997a: 7).

The connection between deforestation, climate change and rainfall reduction stimulated the institution of forest protection systems by colonial states, partly because they were seen as a threat to the colonial economy and the health of settler populations (Grove 1997a: 8). The changes instituted at policy level and in practice included the enactment of various laws governing natural resource use, and establishment of forest reserves that required the removal of their inhabitants.

The first hunting regulations in South Africa were instituted in 1846 and 1858 with the rampant hunting and depopulation of big game species (Carruthers 1989: 190). The Forest and Herbage Protection Act was introduced in 1859 (Grove 1989: 177) in recognition of species disappearance as a consequence of hunting, deforestation and burning, and the effects of fires.

These kinds of conservation policies initiated under colonialism, Grove argues, led to changes in the tenurial relationships between people and the natural resource base, including the land, from "locally evolved man-made relations towards a direct private property status or to direct state control", and were followed by increasing exploitation of the landscape (Grove 1997a: 179).

The environmental degradation and subsequent prescriptions for its management highlighted by scientists, and which led to perceptions of threats to the colonial economy, were not the only motivation for the establishment of forest reserves and the enactment of a particular kind of conservation policy. Control of the landscape and people, and then the appropriation of resources for both private capital and the state, were as important (Grove 1997a: 184).

Grove's argument suggests that the interests of scientists, the colonial state and private capital were not one and the same: certain aspects of scientific theory were favoured by the state, while some scientists were critical of state activities. Meanwhile, the colonial state was not always in favour of private capital accumulation: "it was relatively hostile to the profit-maximising activities of private capital in timber production and to expansion in the area of arable land" (Grove 1997a: 185).

While Grove recognises that ecological destruction is not a feature unique to Western imperialism, he argues that the imposition of a European capitalist economic system across the globe led to changes in land-designation that interfered and disrupted "customary methodologies of interaction with forests, pasture and soil that colonial … [and] have exercised the most intimate and often oppressive impact on the daily lives and ways of production of the rural majority throughout much of the (especially) tropical world" (Grove 1997a: 180). The introduction of laws and land-use practices based on ecological theories developed in the colonies by Western scientists, and used selectively by colonial states to further their own economic and political agendas which served to sunder established human-ecological relationships, Williams refers to as "ecological imperialism" (Williams 1997: 169). Their concerns were not necessarily shared by the societies they governed, nor by the scientists whose theories they used.

Authors like Williams (1997: 181) and Mackenzie (1997: 222) point out that the relationship between ecological scientists and the colonial state were not homogeneous, amenable to simple explanations, or necessarily "always already in an exploitative relationship with the people and natural resources of the developing world" (Sachs 2003: 111). In this sense, ecology became not just a "way of describing the world" but also a philosophy, ideology and a "science of empire" (Robin 1997: 63).

The policies and actions taken by the state in the name of environmental protection also did not go unchallenged (Grove 1997a: 185). Grove suggests that these sorts of policies were met with local resistance, suggesting that a form of public environmentalism had also emerged during this period, although it may not have been named or recognised as such.

Sports hunters lobbying the early Afrikaner government towards the end of the nineteenth century to address rapacious hunting (Mackenzie 1997: 218) were amongst the earliest overtly recognisable forms of civic environmentalism in South Africa. Until that point, environmental policies - in the form of forest reservations and prohibitions on the exploitation of natural resources - were seen as a predominantly state rather than individual or public concern (Grove 1995: 479).

The forest reserve system provided a model for environmental policies of the turn of the 20th century, and nature reserves were established to protect big game species and their habitats. As Grove (1997a: 222) indicates, much of this kind of conservation policy utilised discourses of the natural sciences to "justify and promote the unprecedented acquisitions of control over large parts of the landscape". The nature reserves also served to expand state appropriation of land. Singh and Houtom (2002: 254) similarly argue that conservation has historically been "produced as a disciplinary tool for the expansion of state control through the domain of public lands and enhanced rule-making and was supported by actors and agents responsible for the production and dissemination of conservation knowledge".

Nature conservation in protected areas is one form of environmental management that has been emphasised and associated with state and public environmentalism since late

colonialism and through apartheid in South Africa, and has remained a prominent feature of state environmentalism in the country since the end of the 1800s until present. The way in which nature conservation has been conducted, however, has changed with the political, economic, social and ecological dynamics of the times, and I give this some attention below.

Apartheid-era Environmentalism and State Environmental Management

There appears to be relatively little research available on apartheid environmental management and policy that might reveal management strategies and approaches under the apartheid administration beyond nature conservation. Other kinds of policies, such as the Betterment Schemes or forestry policy, for example, remain relatively untouched by academic analysis through an environmental lens.

For these reasons, I consider the available literature that deals predominantly with nature conservation in South Africa in order to shed light on the kinds of environmentalisms that emerged during apartheid and led into the present political, economic, ecological and environmentalist era in South Africa in which the discourse and practice of permaculture has emerged. I also give attention to the work of authors like Beinart and Coates (1995) who do attend to other permutations of environmental management under apartheid.

A number of authors have commented that, beyond the establishment of protected areas addressing drought through agricultural modernization, the apartheid state largely ignored environmental issues – particularly those brought about by industrialisation, and by the system of apartheid itself that instituted the Bantustan or homelands system, separate development, and stymied black urbanisation. Khan brings attention to the environmental dimensions of the "homelands" policy that was instituted under apartheid. Under this policy, those categorised as "black" and fitting into particular ethnic categories were to be relocated to their apparent "ethnic homelands" or *Bantustans*. With the African populace largely confined to small rural locations and denied full access to the economy, overpopulation, poverty, lack of services ensued and brought with them deforestation and environmental degradation (Khan 2000: 161). But what these kinds of analyses seem to miss by saying that African environmental needs were ignored in favour of "green" conservation issues

are the ways in which apartheid policies did operate in those contexts, the kinds of relationships between the state and society that ensued, and – the forms of environmentalism and resistance to state environmental management policies that did emerge.

It is not initially easy to gauge environmental policy and practice under apartheid for a number of reasons. Firstly, there was no overt environmental policy until the end of apartheid in South Africa. Mining legislation, for example, did not pay heed to environmental or water protection, and environmental management in mining was only legislated in 1991 (Colvin and Burns 2011). Laws developed during apartheid relevant to environmental management included the National Monuments Act (Act 28 of 1969), the National Parks Act (Act 57 of 1976), the Atmospheric Pollution Act (Act 45 of 1965) and the Environmental Conservation Act (Act 73 of 1989) (Colvin and Burns 2011: 29).

Nature reserves in South Africa were established initially as sanctuaries for game in the context of over-hunting, and ineffectiveness of earlier instituted hunting laws (Carruthers 1989: 192). The first formal game reserves established in the Cape in 1856 (Grove 1989: 177). The purpose, meaning, management and utility of nature reserves soon transformed, however, with a changing political and economic situation as the South African political body shifted from the Union of South Africa to the National Party in 1924. Carruthers (1989) provides the Kruger National Park – established as such in 1926 - as an example of the way in which nature conservation practice was shaped by the politics and ecological theories of the times. The Kruger National Park, she explained, formed out of the amalgamation of smaller reserves established at the turn of the previous century, as well as adjacent lands which were occupied by farmers and indigenous peoples. It was only with the National Party administration, though, that nature conservation took a commercial turn, and came to be viewed as a viable economic pursuit through income generated from tourism in the form of recreational game viewing (Carruthers 1989: 190). On the one hand, Carruthers argues, its establishment formed part of a broader nation-building project amongst white South Africans (1989: 189). On the other it served the purposes of a racially divisive political dispensation by demanding the removal of African populations from the lands established under the reserve (Khan 2000: 158).

The kind of conservation put into practice – like the forest reserve system established under British colonialism - has been typified by the state's claiming of land for the purposes of conservation, and the removal of inhabitants from that land: what is now widely referred to as “fortress conservation” (Singh and Houtom 2002: 255). National park management started out in a fairly non-systematic way, with the parks established as sanctuaries for wildlife with very little human involvement in them. It was only later, according to Carruthers (2008:203), that national parks began to be managed according to scientific principles of the time, supported by an efficient bureaucracy that had developed around it. Carruthers describes a shift from management “based on custodianship and the 'balance of nature' into scientifically managed parks with a philosophy of 'command and control' or 'management by intervention'” (Carruthers 2008: 203).

The emergent management policy that developed under the post-World War II apartheid state was influenced by assumptions in ecological theories prevalent during that time. Much of the ecological theory that came to prominence, both during and after colonialism, was developed in the colonies and local knowledge and history shaped not only those theories, but also their debates (Dunlap 1997: 85). Ecology as a “pure” science developed between the two world wars, while at the same time applied science in game management began to grow, particularly in the United States (Dunlap 1997: 16). The ecosystem concept that was coined by American Alfred Tansley in 1935 provided an accessible way for both the public and the state to understand complex ecological processes, although these were by definition simplified to make them understandable (Golley 1993: 2: 4). These ecological ideas developed by ecologists – including some in South Africa – were applied in South African nature conservation. The best approach, it appeared, to conserve species and landscapes would be to separate them from the activities of people, and preserve them within a fenced-in area. This approach also built on ecological theory that assumed that it is possible to manage natural populations and landscapes as if ecological systems could function in isolation.

Carruthers explains how ecological principles of stability, climax and equilibrium were applied: “Because cause and effect were thought to be directly linked, this meant

that a stable ecosystem could be engineered that would maintain a climax and 'balance' the numbers of specific species of wildlife with the amount of available water and appropriate grazing and/or predators and prey" (Carruthers 2008: 228). These ecological theories were drawn upon to guide a conservation research agenda as well as conservation management strategies that included vegetation monitoring, species censuses, translocation, burning regimes and culling (Carruthers 2008: 227).

Again, the ecological paradigms used to inform the management of nature reserves fitted neatly with the political directives of apartheid, aligning with such policies that served to separate African and "white" South Africans in favour of the latter, and to the detriment of the former as they were denied access to nature reserves (except as labourers) and their natural resources. The racism implicit in such conservation practice, argues Khan (2000: 156), alienated African people from the environment and led to an hostility towards such conservation efforts and environmental issues. This narrow approach to environmental management not only dispossessed native populations of land, but also their access to natural resources. Moreover, when they were forcibly removed from declared protected areas, and moved to "native reserves" under colonial policy and later, to "homelands" under apartheid segregationist policies, these areas became overpopulated and the environments they occupied rapidly deteriorated as a result (Clarke 2002).

Nature conservation emerges as the primary and overt approach to environmental management under apartheid. However, analyses such as those provided by Beinart and Coates (1995) suggest that nature conservation and protected areas were certainly not the only forms of environmental management, with underlying environmental discourses attached and significant consequences for both South African society and environment.

While the colonial state in South Africa favoured dessication theory and established forest reserves and plantations to counter expected climate change, Coates and Beinart (1995: 48) argue that it was not the use of natural resources through activities such as mining or even deforestation that were the primary drivers of ecological change in the South African landscape. Rather, it was the introduction of new crops and animals that initiated the most profound environmental changes here. They also argue that in

the enactment of these forest policies, African's fuel needs were not completely ignored. Africans were permitted to collect windfalls in some plantations, and in the Transkei were encouraged to plant woodlots around homesteads to provide for their fuel needs, and in some cases headmen were permitted to manage small indigenous woodland (Beinart and Coates 1995: 48) – although within the reserve system. So, on the one hand, it would appear that state policy around forest reserves and plantations in practice did not entirely respond to the most pressing causes of environmental change, but on the other hand did not serve entirely to divorce Africans from land usage, but they nonetheless dispossessed people of land and access to resources within a broader system that stymied African urbanisation.

Yet agriculture constituted an important political concern and motivated a range of policies that had significant social and ecological implications – and upon inspection, appears to have generated an environmental discourse and range of practices of its own. Beinart and Coates describe the transhumant sheep and cattle farming that catered to the needs of coastal settlements and supported expansion, wool for the export market, and subsistence farming characterised settler agriculture in South Africa until around 1910 (Beinart and Coates 1995: 54-9).

The colonial state had already begun to promote agricultural expansion from about the 1880s (Beinart and Coates 1995: 60), not long after the discovery of diamonds and gold, and the minerals had become a pivotal part of the South African economy. Systematic grain production began to proliferate around 1910 alongside the gold mining industry of the Witwatersrand. The authors suggest a link between the growth of industrial mining and the emergence of industrialised and modern agriculture in South Africa, and in turn the suppression of local land-use practices. Beinart and Coates (1995: 65) explain that from 1910 to the 1950s, “[l]egislation and the rise of large-scale commercial grain farming in South Africa had undermined African sharecropping on white land” and encouraged modernization in agriculture, often attributing issues like disease, overgrazing, soil erosion, vermin and drought (Beinart and Coates 1995: 60-1) to settler and African land-use practices.

Policies were developed under apartheid to manage the environmental consequences of agriculture, and could be considered forms of environmental policy. The 1932 Soil

Erosion Act made provision for “large funds for conservation and water works on farms. A sub-department of soil and veld conservation was subsequently set up within the Department of Agriculture” (Beinart and Coates 1995: 64), while the 1946 Soil Conservation Act “created largely self-regulating local soil conservation committees” (Beinart and Coates 1995: 65), and attempts were made to manage the watersheds of major eastward flowing rivers.

The “betterment schemes” in the homelands constituted another form of state concern with the environment, though within a very particular context. Beinart and Coates (1995: 66) indicate that very often the kinds of policies described above were more restrictive over African land-use within the “homelands” than that of white commercial farmers. They explain that “[w]hite fears of being swamped by rapid African urbanization spawned by perceived environmental collapse added urgency to government intervention. A scheme for the betterment of the African reserves was proclaimed in 1939. State officials would plan each area individually, demarcating arable, grazing, residential land and woodlots. Scattered African settlements would be concentrated in villages and pastures fenced in camps along the lines advocated for large white farms. This was an enormously ambitious programme and only small beginnings were made prior to the 1950s. Yet it remained at the core of state policy for half a century” (Beinart and Coates 1995: 66).

Evidently, the state did not ignore African environmental issues, but decided from above what these were and framed them in terms of threats to white society. The government tried to contain these issues in the homelands where African people were compelled to reside. At the same time, it appears that along with the policies that enforced separate development, these ecological policies served to suppress African agricultural practices and had their own environmental consequences: “Controls over fire, fencing, disease and transhumance, partly justified by conservationist imperatives, worked against smallholding tenants. Given the conditions under which many sharecroppers operated— they had to maximize production in a short space of time, under constant threat of eviction—their farming practices may have been environmentally damaging” (Beinart and Coates 1995: 65). Moreover, as Khan (2000) indicates, the institution of the Bantustan system had its own ecological consequences associated with rural impoverishment, lack of service delivery and overpopulation.

Simultaneously, the apartheid state had been more cautious with white commercial farmers (Beinart and Coates 1995: 66), and while African farmers were facing greater challenges in agriculture – restricted to smaller and marginal pieces of land, their practices monitored and regulated - industrial agriculture amongst white farmers was being pursued and supported by the state, accompanied by standard approaches of monocropping, the application of chemical fertilizer, poisons and extensive irrigation (Coates and Beinart 1995: 67-8).

These policies that are arguably environmental in character, and the social, economic and environmental inequalities they engendered in South African society, did not go unheeded by the public. Resistance to such policies was expressed "in black popular movements opposing government conservationist measures in the African reserve areas. Betterment and rehabilitation schemes … cut across African patterns of settlement and farming and it was social disturbance that provoked protest. Africans admonished interfering officials not only with economic and technical arguments but also with snippets of folk wisdom, sometimes expressing their views in metaphors of ancestral respect" (Beinart and Coates 1995: 99). Forms of environmental resistance and environmentalist discourse emerged not only around nature conservation practice, but also around the policies that informed environmental management by the apartheid state. Evidently, an African environmentalist consciousness and discourse began to develop alongside and in response to some of the less obvious policies governing environmental management under apartheid, especially those which presided over the homelands, enforced separate development and attempted to limit African urbanisation.

The Homelands system, forced removals and pass book laws that drove economic and social segregation in South Africa, as well as kinds of environmental management strategies employed, for example, under the Betterment Schemes, by Beinart and Coates (1995) account, were driven by fears of African urbanization, and served to restrict it. The history of conservation indicates that nature conservation in protected areas was carried out by the state not just for its own good, but served commercial and political purposes – including the dispossession of African land rights and access. Analysts of contemporary environmentalism seem to suggest that with its focus on

conservation as the primary environmental policy in South Africa, African environmental needs and issues were ignored. However, the attention given to the Betterment schemes and other programmes by the apartheid state suggest that African environmental issues were not entirely ignored. Rather, it seems that the state tried to restrict these – like African people – to the homelands, and to keep them out of the urban areas. The policies themselves were – like conservation policy – not strictly benevolent, nor beneficent. As Beinart and Coates (1995) show, they also had negative environmental as well as economic consequences. Neither the social policies to restrict African urbanisation, nor the environmental policies to limit environmental problems, proved very effective under apartheid.

African residence in cities, albeit shaky and temporary in nature, was inevitable. By 1986 the Pass Law had been done away with and replaced with a policy of "orderly urbanisation" (Murray 1987: 311), signalling the apartheid's state's recognition that it could not stop African urbanisation. But it still tried to control and limit it. By the end of apartheid, South African cities experienced exponential growth as people moved from the impoverished homelands and rural areas in search of economic opportunities and access to amenities which had been historically denied to them. What resulted was the proliferation of shack settlements in the areas declared for different race groups under the apartheid state's policy of separate development. Under apartheid, Africans' living and working conditions – such as exposure to hazardous materials in mining, or access to potable water and sanitation in rural and urban areas – were largely ignored.

New environmental issues arose with rapid urbanisation that were linked to public health, and associated with poverty. The South African state's approach to conservation, and the apartheid state's attitudes towards environmental issues, has remained characterised by "fortress-style conservation" that privileged the white constituency until the 1980s, when new ideas in ecology began to emerge, and the political situation in South Africa began to shows signs of change. Similarly, the mainstream South African environmental movement that grew during apartheid, and had its roots at the turn of the 19th century amongst sports hunters (Carruthers 2008), remained closely tied to earlier concerns around the preservation of game species and their habitats. Khan (2000: 160) explains that "the development of mainstream

organizations remained strongly influenced by the elitist, wildlife-centered, preservationist approach of their predecessors. The aims and activities of these organizations emphasized the preservation of endangered fauna and flora and the protection of the natural environment. However, since the movement was responsive only to the interests and perceptions of its narrow membership base, it remained hostile to the interests and perceptions of blacks." The kind of protectionist conservation described above came to be seen as a "white" thing, and a general ambivalence towards that perspective on environmental management reportedly emerged amongst African people (Mittelman 1998: 867).

From more or less the end of the 19th century until the end of apartheid, state environmentalism has been characterised by a preservationist approach that foregrounded species conservation through the establishment of national reserves, and treated environmental issues independently of wider economic activities. One form of public environmentalism has been associated with 19th century sports hunters concerned about big game species and their habitats, mirroring to some extent state discourse.

Another key area emerges as an important dimension of state environmental management, and specifically in relation to policy that governed agricultural practice that was very often directed in particular at African occupants of the homelands. The homelands policies, and the legislation governing land use there took stock of issues like soil erosion and catchment management, amongst other issues, to try to contain environmental problems in the homelands. However, they were part of a broader system of dispossession that stripped Africans of their land use rights, restricted their agricultural practices and led to additional environmental problems. In the same way that Grove refers to resistance to the colonial state's demarcation of forest reserves and subsequent restriction on African access to land and natural resources, Beinart and Coates indicate extensive resistance to the policies governing land use in the homelands. These authors also suggest that the ecological and social discourses that supported the separation of people from nature and from each other in policy were not applied evenly, or always successfully, and there were sites of resistance, negotiation, and at times co-operation.

Both conservation policy and those policies that governed environmental management under apartheid, it appears, ignored African environmental experiences and perspectives, or restricted their concerns to the "homelands". From the state's side, how Africans were affected either by conservation activities or the environmental effects of industrial activities or its policies was not deemed important. And amongst the growing "green" environmentalist movement, Africans were largely excluded or not recognised (Khan 2000). Giving attention to these less obvious forms of apartheid state environmentalism sheds light on another stream of environmentalism in South Africa seldom referred to in the literature that seems to highlight the roots of "green" environmentalism.

Hughes' (2010) work on land-use practices amongst white Zimbabweans provides insight as to how an environmentalist perspective like biodiversity or nature conservation becomes a race and class interest, and even an instrument for racial segregation, even if that is not the overt intention. Hughes argues that "nature-loving" where nature was constituted by plants, animals and landscapes devoid of people and in need of conservation (by white people) "threw blacks out of focus" and "gave a white enclave the hubris of a white nation-state" (2010: 24). Hughes alludes to this retreat into nature as a form of self-segregation which enabled whites to avoid both social integration and racial animosity, which at the same time "hurt both black and white Africans" (Hughes 2010: 13). Love of the landscape, he argues, became a "geographical obsession" with an "attendant social blindness" that at once allowed whites to see themselves as belonging to the land, and at the same to made them politically vulnerable under black rule (Hughes 2010: 23).

Hughes describes how a focus on traditional environmental concerns amongst white people allowed for the experiences and realities of "black" African people to be overlooked and ignored. Indeed, key areas that have emerged as environmental concerns today were overlooked by the apartheid in favour of nature conservation. As a range of authors point out, unacknowledged and unaddressed African urbanisation is one issue that is associated with a range of environmental and public health issues. Other areas of concern include the environmental consequences of both mining and industrial agricultural activities. As indicated above, the apartheid state restricted African agriculture, but promoted and supported industrial agriculture associated with

monocropping, poisons and pesticide use. It also had very few limitations on the mining industry. All three of these blind spots in apartheid environmental thinking and policy have emerged as critical environmental issues in contemporary South Africa, but seem to remain unacknowledged by the state.

Contemporary South African Environmentalism

The African National Congress-led (ANC) government that succeeded the apartheid National Party in 1994 inherited a complex set of environmental problems, associated with delayed and rapid urbanisation, and heavy industrialisation associated with the mining industry and large infrastructure development programmes initiated by the apartheid state as well as industrial agriculture. Cock (2015: Online) describes South Africa as "in a state of ecological collapse moving towards ecological catastrophe".

Environmental reportage in the media seems to support Cock's dire prediction. South Africa's fish stocks are described as "devastated" and the oceans polluted by agricultural run off, eroded topsoil, and untreated sewage (Clarke 2002). South Africa's sewage treatment as a whole is inadequate, with the majority of the country's 800 water treatment plants releasing raw sewage into rivers (Kings 2015: Online) and 300 million litres of sewage are pumped into the oceans every day – leading to nutrified marine "dead zones" that threaten marine life, public health and the tourism economy (Staff Reporter Business Day 2012: Online). This poor treatment of sewage has been attributed to underfunded municipalities, population growth and poor maintenance and management (Newmarch 2010: Online, Kings 2015: Online). Inadequate sewage treatment and facilities – amongst a range of other state supported services and infrastructure delivery - also impact on people's health. Unsafe water and air pollution contribute to the population's disease burden (Matthee 2011: 37).

Mining, historically the cornerstone of South Africa's economy, leads to acid mine drainage (AMD) and has desecrated drinking water in some parts of the country (Kings 2016c: Online), affecting health and local ecologies. In 2008 pollution from upstream coal mines was associated with the poisoning of the Kruger National Park's, South Africa's largest protected area, rivers and beasts (Foster 2008: Online).

Yet, coal mining is proliferating in South Africa and absorbs valuable and fertile agricultural land: it is projected that coal mining operations in the Mpumalanga province (where the country's deposits are richest) will occupy 12% upwards of the country's arable land – and 46% of that province (Davies 2014: Online).

Agriculture accounts for 63% of the country's water consumption (Blaine 2013: Online). The sort of agriculture practised commercially in South Africa, involving the intensive use of pesticides and chemical fertilisers, has its own environmental implications – river systems already sullied by inadequately treated sewage, or acid mine water - are polluted further with these poisons, excess nutrients and silt from run off (Blaine 2013: Online). Industrial techniques like monocropping on vast tracts of land contribute to soil erosion and compaction.

While our water systems are becoming increasingly polluted and water more intensively used with these kinds of practices, the country's future water security looks dire. It is projected that there will be water availability under current consumption rates only until 2030 (Clarke 2002). 95% of the country's available fresh water resources had already been allocated by 2005, and it is predicted that it may run out of fresh water by 2025 (Blaine 2013: Online). At the time of writing in 2016, South Africa was experiencing the worst drought in 23 years (Wild 2016: Online). In 2017, where I live in Cape Town, the water supply dams had been depleted to 10% of their volume.

South Africa's environmental concerns are not simply limited to dynamics within the country. Climate change, associated primarily with fossil fuel consumption, is seen as one of the most pressing environmental concerns facing the entire planet, and it is expected as a consequence that Africa will experience intensified flooding and drought, food insecurity and more intensive urbanisation as rural environments deteriorate further (Bond 2012: 11).

When the African National Congress came into power in 1994, environmental concerns were directly addressed in their policies, and these included the concept of sustainable development. The party broadened the scope of environmental policy to become more socially responsive (Khan 2000: 169) and to address the inequities

brought about by apartheid, including the environmental problems that the African population disenfranchised by them faced in both rural and urban areas. These kinds of issues are related to basic needs historically denied to Africans - what are referred to as “brown” issues (Khan 2000: 174), or the “brown agenda” and “environmental justice issues” (Khan 2000: 174). They include inadequate sanitation, solid waste removal, access to drinking water, and exposure to pollution from industry (Khan 2000: 179).

The environmental rights recognised in the Constitution were taken up by the ANC's initial channel for addressing environmental and social inequality – the Reconstruction and Development Programme (RDP). The RDP emphasised environmental rights for people excluded from access to services and land during apartheid (Carruthers 2008: 805). With Nelson Mandela at the helm, the ANC initially “promised a post-apartheid era of prosperity based on economic growth, jobs for all and the eradication of poverty through the redistribution of wealth and the empowerment of the black majority” (Pillay 2014: 1). The RDP, which implied public investment for socio-economic transformation, was within two years eclipsed by the Growth and Redistribution Programme (GEAR) that emphasised investment, poverty eradication and employment creation independent of environmental concerns, and encouraged “a reliance on the market – through privatisation, foreign investment and liberalised trade” and “compromised with the economic elite, embedded in the minerals-energy-finance complex” in their favour (Pillay 2014: 1). This neo-liberal approach to development was extended to environmental management.

According to Esler *et al.* (2006: 77) there is “no single comprehensive environmental law” in South Africa. It seems that environmental policy needs to be extrapolated, to some extent, from a range of other laws and policies that make reference to environmental management and sustainable development. These include Constitution of South Africa, the National Environmental Management Act (No. 107 of 1998) (NEMA), Municipal Infrastructure Act, the National Water Act (Act 107 of 1998) (Colvin and Burns 2011: 29), agriculture policy and climate change.

The Constitution of South Africa (1996) enshrines a number of “environmental rights” for South African citizens: to “an environment that is not harmful to their

health or well-being", and one that is "protected for the benefit of present and future generations" through the prevention of pollution and ecological degradation, conservation and "ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (Section 24 of the Constitution of South Africa of 1996).

A range of acts specify the legal ramifications of the vision expressed in the Constitution. The National Environmental Management Act – developed under the influence of USAID (Schroeder 1999: 370) in the 1990s – provides more specific guidelines and strictures around environmental management with reference to the rights enshrined in the Constitution. Biodiversity conservation is also recognised in policy as an environmental priority in the Biodiversity Act (No.10 of 2004) that falls under NEMA, and South Africa is a signatory to the International Convention on Biological Diversity (Esler *et al.* 2006: 78). Agricultural practices are also regulated under the Conservation of Agricultural Resources Act (No.43 of 1983) which gives attention to the use of natural resources such as soils, water resources and plants. The National Water Act (Act 36 of 1998) (NWA) regulates water usage and protection by private and public users.

Two principle discourses of environmental management emerge as significant in South African state practice - transfrontier or transboundary conservation (Singh and Houtom, 2002 and Wolmer, 2003) and spatial or infrastructure and economic development (Simon, 2002 and Bond, 2012). These discourses of environmental development reflect the current South African state's concern with both traditional green conservation issues and emergent brown agenda issues, and the adoption of neoliberal economic policies. Both these discourses assume that economic development in the well-established mode of profit-generation will address environmental management and ameliorate social issues, like poverty and unemployment, at the same time.

Protectionist conservation remains a significant discourse and channel for environmental management in South African policy. The most recent permutation of this green agenda - transboundary conservation - developed in response to shifting theories in ecological science that recognised that ecological processes were not

limited to the boundaries of protected areas, nor were they static or amenable to technicist management, or unaffected by social processes outside of protected areas (Singh and Houtom 2002). It implies management of natural resources across national boundaries and fits with South Africa's post-apartheid sustainable development and social justice goals because it is imbued with the language of social, cultural and sustainable development (Simon 2002: 19).

The discourse recognises the ways that people living near protected areas are affected by them, and highlights the value of community-based conservation that is supposed to include and benefit those communities historically denied access to the land and natural resources which the protected areas came to occupy. Conservation from this perspective is meant to lead not only to better environmental management but also social and economic development. It fits neatly with neo-liberal economic policy which favours privatisation and the withdrawal of the state from public functions. Consequently, nature conservation practice has become increasingly commodified and market-driven, with privately owned entities rather than the state becoming the channel for economic and social development (Singh and Houtom 2002; West, Igoe and Brockington 2006). While protectionist conservation with a commercial orientation dominated the environmental management agenda under apartheid, and remains and important dimension of environmental practice currently, it now receives less state financial support, is subject to greater international interference and has been eclipsed by social and economic concerns. According to Bond (2012), the principle environmental management strategies now employed by the current dispensation centre on infrastructure and economic development, in the form of state-sponsored housing and infrastructure provision. Spatial development initiatives (SDIs) constitute one example of environmental management through urban planning and infrastructure development (Simon 2002).

Although SDIs and TFCAs were formulated and presented as means to bring about social justice and at the same time lead to sustainable environmental practice, Simon argues that upon closer inspection that both environmental initiatives (one, through the channel of sustainable development, the other through transfrontier conservation also underpinned by notions of sustainable development) do not really represent a clear break from past traditions, and there is a continuity between pre- and

post-apartheid environmental management practice in South Africa. In relation to the SDIs, their industry-oriented development corridors tend to mirror the development axes that were pursued under apartheid. In terms of both SDIs and TFCAs, Simon argues, " the dominant ethos during implementation remains predominantly technicist and top-down in a manner consistent with modernization theory, with too little evidence of post-structuralist approaches to development, sustainability and environmental justice" (Simon 2002: 23).

Bond (2000: 2) identifies three ecological perspectives that emerge in South African policy that governs environmental management and resonates with Simon's (2002) analysis: an "orthodox economic" perspective that is associated with the externalisation of ecological problems; sustainable development or "ecological modernization" that favours market-determined tools to reduce environmental damage associated with economic activities; and "environmental rights" - a rights-based discourse associated with moral and distributional issues pertinent to post-apartheid South African society.

These three discourses, Bond points out, are intrinsically at odds with one another – in part because, as Pillay (2014) argues, an economy centered on industrialisation and urbanisation, and serving the interests of the mining-energy-finance industrial complex implies dispossession, environmental abuse and the concentration of wealth in the hands of a few – increasingly international – corporate bodies and organisations. While the authoritarian and exclusionary nature of protectionist conservation and apartheid environmental management were supposed to be addressed through public participation, environmental management as it is expressed in the various South African policy documents remains "technocentrist and managerial" (Scott and Barnett 2009: 3).

In spite of these policies – or perhaps because of the disjunctures between them - environmental injustice and unsustainable practices persist in South Africa, as they do globally (Patel 2014: 169). Post-apartheid, the South African economy is still driven by the needs of the mining and energy sectors (Pillay 2014: 6) and defined by urbanisation and industrialisation (Pillay 2014: 2) – all of which are associated with

an abundance of goods and services which intrinsically demand the "dispossession of people's land and livelihoods, the commons (including public assets) and the natural environment" (Pillay 2014: 2). In spite of a change to a non-racial dispensation ostensibly geared towards redressing inequities brought about by apartheid policies, the state's economic and industrial imperatives remain driven by commercial interests, and poverty, unemployment and inequality remain salient features of South African society.

Pillay (2014: 2) describes the policy shifts around environmental management in the post-apartheid state as "half-hearted, grossly inadequate or symbolic". Urban environmental problems that affected mostly African populations in South African cities were envisioned to be addressed through infrastructure provision, and economic activities were supposed to be regulated by principles of sustainable development. However, in practice it emerges that the state has failed to realise urban service delivery to those most affected by unhealthy environments, and pursues industrial development as the primary course for economic and social development. In other words, urban environmental issues that affect primarily the poor are not being adequately addressed, nor the ecological degradation associated with heavy industry, industrial development or industrial agriculture.

The trends towards presenting economic solutions to environmental problems, and turning traditionally state-led public services, such as conservation or municipal service provision, into channels for economic and social development whilst at the same time withdrawing state support for them, are symptomatic of broader patterns of global capitalism. Contemporary dynamics associated with neoliberal capitalist economics (Satgar 2014a: 7-8) have been referred to as being in a state of crisis following the collapse of the US housing market, the rescue of major banks by state bailouts funded by taxpayers and a global economic recession. As with the case of carbon emissions, the solution to economic downturn has been to "fix" financial markets where "[f]inance has to be more closely regulated and monitored, corporate-led globalisation continues, inflation targeting … is protected, and fiscal restraint continues". One of the effects of these "financial fixes" aimed at ensuring economic growth has been the "commodification of all that is valued" (Pillay 2014: 3),

including environmental processes that are seen as beneficial to humans and potentially the economy, such as carbon sequestration.

The underlying idea here is that by stimulating the generation of profits through creating new markets from natural processes, as well as the privatisation of services and conservation, for example, should lead to economic growth, and in turn generate income necessary for sound environmental management and social development at the same time. Under neoliberal capitalist economics and policies, alternative approaches to curbing environmental damage stimulated by industrialisation are not given much attention, apparently. Sustainable development and social rights are addressed in word, but seldom in practice – as the case of South Africa's energy policy demonstrates. “Orthodox economics” prevail (Bond 2012). Bond (2012: 76) describes a stubborn refusal on the part of the ruling elite – the organisations and corporations that drive state policies – to shift the patterns of production and consumption that have generated ecological degradation and social inequity across the globe. Satgar (2014a: 8) argues that this is not just a crisis of finance, but a crisis of capitalism altogether that cannot be solved by further profit-orientated instruments. In other words, the ecological degradation and social difficulties brought about by industrial capitalist economics are unlikely to be solved by them. New solutions are required to protect the “vital conditions of life”, but “ruling-class circles actively work to prevent radical structural change in this as in other areas, since any substantial transformation in social-environmental relations would mean challenging the treadmill of production itself, and launching an ecological cultural revolution” (Bond 2012: 65).

It would seem that the primary aim of the new South African state was to redress inequality and make available to all South Africans opportunities to live a reasonably healthy and fulfilling life. While the RDP suggested there might be a possibility of actual economic restructuring and redistribution, its giving way to the neoliberal oriented GEAR policy that came to suffuse those laws and policies shaping and governing environmental management suggests that although there might have been political transformation in South Africa, its economic structure and reliance upon the mining industry that initially demanded social and ecological exploitation remains fairly intact. As Bond (2012) and Simon’s (2002) analyses suggest, the labels have

changed but the models for environmental management remain largely consistent with the past, albeit in the context of an African-led political dispensation. They do not present real alternatives or a significant break from established industrial, economic and political practice excepting for deracialised policy.

Emergent post-apartheid forms of South African environmentalist movements respond to, resonate with and resist the kinds of environmentalist discourses emanating from the state. However, the sorts of environmentalisms that grew in post-apartheid South Africa sought out similar goals to those of the state – equality, inclusiveness and the addressing of basic needs that affected environmental and public health. Below, I explore the kinds of social movements that have emerged in post-apartheid South Africa.

Environmentalism in South Africa is characterised by two main areas of discourse - “green” (conservation-based) and “brown” (urban and needs oriented) agendas. Murmurs of social movements challenging neoliberal economic policies and practices have begun to be sounded in South Africa, although there is apparently no “single environmentalist ideology” (Cock 2004: 2) or unified strategy to address ecological issues in the country. Khan (2000: 174) argues that environmental problems do not yet have mass support. The “green” and “brown” environmental agendas remain largely independent of one another (Cock 2004: 4), and environmentalism in South Africa as “an inchoate sum of multiple, diverse and uncoordinated struggles and organizations”. Moreover, environmental movements tend to be marginalised in public discourse and policy making (Pillay 2014: 2). The growth of environmental social movements in South Africa, argue Scott and Barnett (2009: 2) is part of the “broader oppositional process and has involved the reframing of the environment as a 'brown' issue connecting to the discourse of social and environmental justice and a rights-based notion of democracy”.

The environmental issues foregrounded by many of these emergent social movements, and related NGOs or community organisations, refer to basic needs, pollution, environmental health hazards and poverty - what are referred to as “brown” issues

(Khan 2000: 174), or the "brown agenda[1]" and "environmental justice issues" (Khan 2000: 174). They include inadequate sanitation, solid waste removal, access to drinking water, and exposure to pollution from industry (Khan 2000: 179). Contemporary environmental problems in South Africa, argues Khan (2000: 179), are tied to socioeconomic and political dynamics that need to be addressed – in particular poverty and inequality.

Two such emergent social movements with a social-ecological orientation that moves beyond protectionist conservation are highlighted by analysts in the field: the environmental justice movement (EJM) and the solidarity economy (SE). The Environmental Justice Network Forum (EJNF), one expression of the environmental justice movement, is taken as testament to the growing, grassroots movement around environmental justice issues. Since its formation in South Africa in 1993, EJNF has gained more than 600 participating organisations and assisted poor communities addressing local environmental problems that affected them (Khan 2000: 174). But, EJNF is not a mass-based organisation, and nor, apparently, is any other (Khan 2000: 176).

Cock explains that "[t]he concept of environmental justice provides a radical alternative to the discourse of conservation, questioning the market's ability to bring about social or environmental sustainability. It affirms the value of all forms of life against the interests of the rich and powerful. It represents a powerful challenge to the anodyne concept of sustainable development, and the increasing commodification and financialisation of nature packaged as "the green economy" (Cock Online: 2015). EJNF is described here as a form of resistance and alternative to the environmental management paradigms and practices inherited from the apartheid state, and those which have developed post-apartheid.

The environmental justice movement (EJM) has its roots in the 1960s civil rights movement in the USA. The focus in the movement is on the ways people of colour are affected on a daily basis by environmental inequity – lack of access to adequate

1 Although environmental justice issues came to the fore in the 1960s, the 'brown agenda' and urban environmental issues were foregrounded during the United Nations Conference on Environmental Development (UNCED) Earth Summit in Rio de Janeiro in 1992 (Sengendo 1997: 40).

municipal services and amenities, or poor populations differentially affected by industrial pollution. EJM represents an alternative perspective on environmental conservation, and foregrounds the rights and needs of the poor. As an overarching discourse, EJM seeks to address racism, poverty and inequality and environmental degradation (Cock 2004: 1) – all salient features of South African society. EJM discourse calls into question faith in free-market logics to bring about social and environmental justice, and seeks to generate a "radical alternative" of the kind that Bond (2012) calls for.

EJM in South Africa does not appear to have an umbrella body or organisation, but is instead constituted by a range of local grassroots groups, NGOs and national networks, and is driven by the South African "poors". The movement in South Africa is characterised by the absence of a decision-making or co-ordinating body, and a decentralized social network that operates through "a dense space of thick, interconnected networks that links organizations, individuals and resources around diverse strategies and tactics including policy advocacy, legal demands and claims, in addition to direct, popular mobilization" (Cock 2004: 17). Organisations associated with and supportive of EJM are EJNF, Groundwork, Earthlife, Group for Environmental Monitoring, EMG (Environmental Monitoring Group), the South African Water Caucus (Cock 2004: 16, 17), the South Durban Community Environmental Alliance, the Vaal Environmental Justice Alliance, Mining Affected Communities United in Action and Womin (Cock 2015: Online). The EJM network is linked through its focus and constitution to international networks as well. Cock (2004: 17) argues that the power of EJM in South Africa lies not in the number of participants, but rather in its potential for mass mobilisation, and suggests that it would be best understood through its qualities and characteristics rather than through quantification. And, its potential for bringing about the kind of changes that authors like Satgar, Pillay and Bond argue to be vital for a reasonable future for humanity, lies in the fact that it is an environmental movement that includes the majority of the South African population. The solidarity economy (SE) is another movement that seeks an alternative to the negative characteristics associated with neoliberal economics. With its historical roots in the intentional communities of the nineteenth century in the USA (Williams 2014: 134), and the labour movement that developed

into the following century, the solidarity economy concept was formulated amongst Latin American movements in the 1990s as they sought to create alternatives to the capitalist economy. As a global theoretical discourse and practice, it is described as a "counter-hegemonic alternative driven from below synthesising emancipatory utopian possibilities while gaining definition through dynamic grassroots practices" (Satgar 2014a: 12). It has found its expression amongst township communities in South Africa, with one notable example in Ivory Park, Johannesburg (Satgar 2014b: 217).

The solidarity economy is only broadly-defined as an alternative mode of production, and an "emancipatory practice" emerging from a desire for a different way of doing things, an "alternative state of being and a way of life" (Satgar 2014b: 199). Williams (2014: 51) describes it as "a series of experiments, becomings, emergent possibilities and prefigurative practices" (Williams 2014: 130). The solidarity economy does not propose a single model or blueprint for achieving its goals, nor one institutional form or practice (Satgar 2014b: 203), but is said to include experiments and to be locally variant. It is not a fully-fledged movement, and has not realised the utopia of an alternative and inclusive economy that is "community-based, needs centered, non-exploitative and non-competitive" (Williams 2014: 129).

The discourse of the solidarity economy emphasises caring and sharing, and "principles of solidarity, cooperation, democratic decision-making, collective ownership, bottom-up processes" (Williams 2014: 59). Additionally, it is supposed to have an ethical basis which calls for "self-reliance, honesty, democracy, equality, learning, ecological consciousness, social justice and openness" (Satgar 2014b: 203). It rejects concentrations of wealth, power and possessive individualism, and seeks to put the economy and the state at the service of people, rather than the other way around (Williams 2014: 59). As such, it is "driven by people's needs and places people at the centre" (Williams 2014: 52), and is meant to address issues faced by those most affected by economic crisis (Satgar 2014a: 12).

The solidarity economy concept includes attention to human-ecological relations, and is described as ecocentric (Satgar 2014b: 203). The primary ecological emphasis appears to be on drawing attention to patterns of production, consumption and household practices (Williams 2014: 57) and the delinking of production from capital

that would entail “an effort to change the economic imaginary by creating a different set of desires and possibilities in relation to the economy” (Williams 2014: 131).

The creation of an alternative economy to that presented by neoliberal capitalism is seen to be primarily through a shift in ownership of the means of production, distribution and consumption from corporations and governments to workers and the populace (Williams 2014: 59). Co-operatives are highlighted as one means to achieve this, but as part of broader networks and connections between groups and individuals seeking to achieve the same goals.

The movement is made up of activist networks, movements and social forces (Satgar 2014a: 12) and “progressive” NGOs (Williams 2014: 51), and is described as a network of networks (Williams 2014: 59). Satgar (2014b: 203) suggests that its anti-capitalist and utopian stance makes it possible for the solidarity economy to link with other similar struggles, and to employ alternative democratic struggles such as transition towns, food sovereignty, basic income grants, community housing and ecovillages. Jara (2014: 224) draws correlations between the aims of the solidarity economy and emerging alternative forms of agricultural production and argues for their compatibility. In particular, he mentions organisations such as the Surplus People's Project, African Centre for Biosafety and Abalimi Bezekhaya, but points out that these organisations and other forms of alternative agriculture “do not comprise a significant mass-based movement for transformation within agriculture, and do not yet have system-wide impacts” (Jara 2014: 224). Other examples of the solidarity economy include complementary currency, cooperatives, community development corporations, social enterprises, community supported agriculture and Fair Trade (Williams 2014: 133). It is described as a “new culture”, “a new way of life, a new way of organising production, and a new economy” (Williams 2014: 54).

Both SE and EJM present alternatives to the current geopolitical status quo of neoliberal capitalism that is manifest in South African policy and practice. Both are characterised by a loose and uncoordinated network of individuals, groups and organisations, and they both seek to redress the range of social and environmental injustices brought about by global neoliberal economic policies as they are applied in the South African context. They are connected to a broader global movement of

people who identify with the labels and are said to represent the interests of the African “poors” and issues associated with the “brown agenda” and environmental justice, and the emergence of a yet unrealised truly African environmentalism that is juxtaposed with the issues associated with “green environmentalism”. EJM has a particular focus on “brown” issues that affect people who would be classified as “black” or “coloured” in South Africa living in under-serviced neighbourhoods without much access to employment opportunities. SE is far broader in its scope and definition, seeking systemic overhaul and seeing as within its ambit a wide range of practices and other forms of movements that might not define themselves as part of the SE movement, such as community-supported agriculture or transition towns. It has been defined more in terms of its characteristics rather than in terms of its practices. At this stage, it appears that SE is largely conceptual, and seems to be more of a descriptive term for anticapitalist socio- and ecocentric perspectives and practices and an attempt to see these as part of a broader movement towards creating an alternative to neoliberal economic practices, whilst EJM has a particular focus and there are extant organisations and individuals within them whom ostensibly identify with the term. They have a number of aims in common, and both seek radical change to the status quo. As such, they appear to be compatible points of view on the generation of alternatives to neoliberal economics that analysts call for. Environmental justice is not integrated into South Africa's conservation ideology (Khan 2000: 176), although it would seem so in theory given the sustainable development rhetoric included in that.

Bond points out that there are thousands of eco-socialist movements across the world that have adopted an anti-capitalist stance and seek to create alternatives to that. He argues, however, that they tend to be defined by single issues and there is a lack of integration or unity amongst them (Bond 2012: 213). They moreover lack the opportunities to meet and commune systematically. The solidarity economy concept appears to be an attempt to address this. He contends that “the challenge for serious environmentalists … remains to continue seeking opportunities for alliances – of 'militant particularist groups' … whether Lesotho communities, South African municipal workers, Alexandra township residents or traditional green activists – around these ecological issues” (Bond 2000: 29). Integrating traditional “green” environmentalism with “brown” environmental justice concerns, and the linking up of

myriad eco-social movements with shared values and aims, even when they are locally specific, emerges as a necessity if a new culture of production, consumption and social integration that puts the needs of people and nature before the generation of profits is to come about, and if the goal of long-term ecological and social sustainability are to be achieved.

Cock (2004: 18) raises questions around the EJM that seem pertinent to a discussion about a joining of forces between environmentalist social movements, and "green" and "brown" issues: would such a movement "articulate the needs, demands and aspirations of subordinate groups?" and "what are the social characteristics of the participants?" It would appear that if a co-ordinated movement that did include a wide range of movements and networks were to emerge, and to be successful, it would need to be representative of the needs, demands and aspirations of all those who participate in it – both the greens and the browns.

Jara (2014: 246) maintains, in relation to agrarian alternatives, that "[it] is far easier to identify or describe the possibilities for transformation … than to realise them in practice … anyone attempting to do so would need to address at least three significant challenges: the constraints imposed by neoliberal state policies, the domination of agrarian capital, and the poor state of self-organisation and limited capacity for sustained social struggles by the mass of the agrarian motive forces for systemic change". It would seem that his argument might extend to struggles against neoliberal economics as a whole. This would require, according to Jara (2014: 246), trying out "participatory mass organising, self-organisation, social struggles and transformative practice" since these have not yet been realised (Satgar 2014b).

Indeed, the questions that Cock (2004) and Jara (2014) raise suggest that it is not yet clear whether the movements described in the South African environmentalist literature do articulate the needs, demands and aspirations of their participants – they still appear to be largely descriptive analyses of movement history and goals, but the participants own perspectives, the ways in which they organise, and their actual transformative practices seem to have received little attention.Yet they do show up some of the limitations of contemporary state approaches to environmental management, and indicate areas for potential mobilisation amongst those who claim

to care for the environment they live in or occupied by other species. They also suggest areas for further inquiry around emergent environmentalisms in South Africa from the perspective of environmental anthropology.

Anthropological Perspectives for Approaching South African Environmentalism and Permaculture

Environmental anthropologists and social movements theorists argue for an analysis not only to the historical trajectories of social movements, their potential for political and social transformation, and their social constitution, but also to the discourses, knowledges and practices that environmental movements and their participants engage in. Anthropologists interested in environmental social movements show an interest in how people who are associated with a particular movement experience it – how discourses circulate amongst participants, what kinds of knowledge are drawn upon in that process, and how these discourses inform people's perceptions of the environment and their resultant actions. They are also interested in what happens when various environmental discourses or perspectives come into contact with each other, the similarities and differences that emerge between them, and the models for environmental behaviour that emerge in the process.

The literature on environmental movements in South Africa is quite limited. While its origins have been traced to 18th century scientific and state practice, it is a field in contemporary South Africa which contains considerable potential for further research and analysis – including the sort that anthropological theory and method offers. A review of environmental history provides some pointers for areas for further development. What emerges from the South African environmental history considered in this chapter is that there is a close relationship between the scientific theory, state environmental policy and management, and the kinds of environmentalism that develop amongst the public. In South Africa, the state has had a long history of environmental concern and management, though has been shown to be put in the service of state political and economic priorities. South Africa's colonial and apartheid history has been definitive, in terms of instituting inequality and social segregation through systematic dispossession of Africans from the land and access to natural

resources through a range of policies which themselves had significant environmental consequences – the establishment of forest and later nature reserves, the institution of the Bantustan system, pass laws and separate development that also constituted attempts to stop African urbanisation, and the Betterment schemes. Much of the literature on environmentalism in South Africa suggests the apartheid state ignored African environmental interests and concentrated on nature conservation as the primary channel for environmental management in the country, and that African environmentalism has been associated with the end of apartheid. South African environmental historians have shown that there were other significant laws and policies related more closely to agriculture, and which have had considerable effect on the South African environment. They also show that the relationships between the state and its subjects were not as clearly defined as the ecological theory, nor the policy prescriptions employed by the state in managing its population and environment, would suggest. Discourses generated by scientists, the state and its subjects in some cases overlapped, and in other cases were in opposition. Environmental practices, too, did not always follow the prescriptions of policy, and relationships between policy, civil servants and state subjects did not always conform strictly with draconian political and ecological ideals of separate development.

Currently, a perception exists that contemporary forms of environmentalism in South Africa, from state to civic, are divided and express easily separable discourses representing easily-identifiable interest groups. Analysts suggest that a truly representative and effective social mobilisation around a concept of environment would include the concerns of both the “green” and “brown” environmental discourses that are taken as the primary divisions within South African environmentalism that correspond with race and class. Environmental anthropologists and historians theory would suggest that on closer inspection these kinds of divisions between state and civic, or green and brown, environmentalism are not always as incompatible or different from each other as their discourses, labels or analyses might suggest. Comparing these sorts of environmental discourses can suggest alternatives to, say, a neo-liberal and profit-oriented global economic control (although, the aim itself implies division). Such analysis should allow for their differences or similarities, the knowledge they depend on, and their sociohistorical constitution, to become more evident. Their similarities could provide a means for common action in agreed upon

spheres. Understanding different environmental discourses as cultural perspectives that are socio-historically constituted also allows for a recognition that firstly, each one's perspective is a consequence of a particular set of confluences and not an absolute truth. Secondly, those histories are often mutually constituted and born of common processes. This realisation too could provide a basis for unified action or mutual understanding between ostensibly separate environmental discourses and experiences, and the movements that grow around them.

Theorists of environmentalism in South Africa suggest that new forms of environmentalism in South Africa are emerging, particularly those that foreground the interests of an African population experiencing the long-term social, economic and ecological consequences of more than a century of dispossession associated with the altering of land-use rights effected under colonialism and apartheid. These issues, referred to as issues of "environmental justice" and the "brown agenda" are said to represent the needs of the people most affected by environmental problems generated by colonial and apartheid economies, and perpetuated by the current state under its neoliberal economic-inspired development programmes. The environmental justice movement and solidarity economy are responses to the experiences of people living under such conditions, and reject those features of the South African political-economy that engender inequality and environmental injustice, and present alternatives to that. The environmental justice movement in South Africa is better-described, and case studies particularly for single-issue causes, are provided in the literature. The solidarity economy in South Africa appears to still be very much still a concept that is used to describe some existing practices and organisations that fit with the goals of the solidarity economy, but mostly seems to describe an ideal.

The Human Economy Programme operating from the University of Pretoria that associates itself with the "alter-globalization" seeks to contribute towards the broader movement towards economic democracy (Hart 2015:2-3). This programme shares an interest with the solidarity economy theorists in developing alternatives to the "dominant model of rational choice in 'free' markets" (Hart 2015: 2). Hart, representing the programme, argues that often "[r]esistance organization is strong everywhere. Special interest associations of every kind proliferate. Resistance to inequality often takes the form of denigrating the dominant bureaucratic institutions –

'the state' and 'capitalism' in this regard – in favour of promoting small-scale self-organized groups and networks. Yet no future society of this century could dispense altogether with the principle social forms that have brought us to this point. So the real task is to work out how states, cities, big money and the rest might be selectively combined with citizens' initiatives to promote a more democratic society" (Hart 2015: 5).

What is suggested here is that casting resistance to inequality as invariably oppositional to the state and capitalism (and the state and capitalism as inherently inimical to its subjects needs), and the ultimate solution as through localised organization of small-scale networks of people is perhaps neither entirely realistic, nor necessarily productive. Instead, it is implied that greater co-ordination between the citizenry, state and capital might be more fruitful a means to achieve greater economic equality and democracy. What Hart argues for – and what the Human Economy Programme set out to do – is to make sense of broader economic patterns that the state engages in (specifically, "national capitalism" in the context of neoliberal globalization) and how "people from a wide variety of class positions in the global South experienced economic crisis." (Hart 2015: 10). The synthesis of perspectives on structural political-economic dynamics with the ways that people experience them, it is shown, can be generated through empirical research eliciting people's actual experiences of economic change.

Similarly, it may be true in the case of "anti-capitalist" environmentalist movements in South Africa, that theorising "green" and "brown" environmentalisms – often seen as representing either state, corporate or "white" interests on the one hand or civic and African, or "black", interests on the other – as ultimately exclusive discourses may obscure the grounds for co-operation, and for resisting those dimensions of neoliberal policy, for example, that have negative social, economic and ecological consequences. It is that kind of co-operation, or the forging of "brown" and "green" environmentalism that many of the South African theorists of environmentalism suggest is necessary. Representing "green" and "brown" issues as more or less "white" or "black" ecological concerns seems to suggest that certain ecological perspectives are associated with static social categories. It may be possible, as Agrawal's discussion about environmentality suggests, that particular environmental

perspectives are generated out of long-standing relationships between people, and between people and the state, for example - rather than a natural consequence of skin colour. Certainly, the history of South African environmentalism seems to suggest quite complex relationships that developed between the colonial and apartheid state that would have generated particular attitudes towards environmental issues that were not as clear-cut as “green”/”brown” categorisations might suggest.

What seems to be lacking in the literature, however, is an account of the sort that social movements theorists and environmental anthropologists call for – how participants in these movements experience them in their daily practices, the kind of ecological knowledge generated and circulated within and between social movements, the kinds of discourses generated out of particular kinds of ecological knowledge, the practices these discourses engender, and the ways in which different discourses interact when enunciated and put into practice.

The current South African government, in spite of a rhetoric of environmental and social rights and policies aimed at addressing the injustices brought about by the apartheid system, appears to be perpetuating the same kind of logic in economic development that it claims to be ameliorating. Its policies and practices are located squarely within a neoliberal logic of economic development for social and ecological development, driven largely by transnational interests rather than sovereign, or even civic interests. The current trajectory appears to spell further ecological degradation and social exploitation. The society as a whole, and the ecological movements that have emerged within it, appear to remain divided along race and class lines.

At the time of writing, the country was experiencing severe drought, currency devaluation and rising unemployment, while at the same time reports of extensive minerals and energy (both coal and nuclear) development were on the agenda. The effects of climate change, and the ramifications of the country's economic dependence on the global system of neoliberal economics came starkly to the fore. It would appear then, that the sentiments and motivations of such movements as represented by EJM and the solidarity economy were becoming increasingly relevant, not only to the “poors” that these movements were supposed to represent, but to the nation as a whole.

It is in this context that the permaculture movement under consideration in this thesis is located, as a global eco-social movement with an anti-capitalist stance. Some questions arise in response to the kinds of environmental issues and political responses described above, both in terms of the state and social movements. In what ways does permaculture practice as witnessed in the case studies for this thesis intersect with the models for environmental management put forward and practised by the South African state? What sorts of alternatives are proposed and enacted in the case studies for environmental management and human social relationships with and within particular environments participants act in? Where does permaculture in South Africa fit with other emergent ecocentric social movements? How does permaculture in South Africa relate to, draw from, influence or otherwise interact with other emergent social movements?

The South African social movements literature also suggests a clear distinction between "green" and "brown" environmentalism in South Africa. The environmental history – and anthropologists might agree – suggests that environmentalist discourses are seldom as clearly bounded as they might at first appear. Tsing (2005) suggests that it is in the "sticky encounters" in real life situations, in relationships between environmental actors, that the similarities as well as the gaps between discourses begin to emerge. It is also in these gaps and overlaps that we are encouraged to seek grounds for potential collaboration between social movements, and new models for environmental action that South African analysts of contemporary environmental movements argue is critical if a mass-based and representative movement is to grow, and to change the current ecological and social trajectory underway. It is this methodological and theoretical opportunity that I hope to take in the analysis and representation of permaculture as evidenced this research. It is in moving beyond theory and into practice and interaction, though, that permaculture's features as a social movement in the South African context might become clearer.

Chapter 4: Methods and Ethics in Studying Permaculture as a Social Movement in South Africa

Permaculture is considered an ecological philosophy and practice, and social movement. In this thesis I explore its manifestations in the South African context in light of anthropological theory and thinking. Environmental anthropology and social movements theory suggest areas of inquiry and analysis for a current understanding of such environmental social movements: discourse, knowledge, power, difference, practice, and movement history and trajectory. In the context of the research focus in this thesis on permaculture practice in South Africa, whiteness studies suggest a racialised analysis of this ostensible permutation of environmentalism.

Contemplating permaculture as a social movement, with a focus on its practice amongst a group of predominantly "white" people in South Africa, including myself, prompts the use of various methods, areas of analysis and reflection. The objects of study range across disciplinary interests indicated in the previous chapter - environmentalism, social movements, globalisation and race, or "whiteness". These are all areas of inquiry that raise certain questions in relation to contemporary environmental movements like permaculture in the South African context.

I found various methodological approaches useful from my position categorised and socialised as a "white" researching, amongst others, people similarly categorised in an ostensible global environmental global environmental movement - my "own culture", so to speak. My approach could be defined as "multi-sited", "autoethnographic" and "home-based". I draw on these methodological approaches to opportunity reflect upon subjectivity and bias in the context of conducting a "native ethnography", but also reflect the ethnographic reality encountered to some extent - both the local and the global.

The sorts of questions raised in anthropology and around environmentalism, globalisation and social movements and those raised in whiteness studies suggest a range of methods and means of analysis for the study of permaculture practice in

South Africa. In this chapter I discuss the kinds of methods and methodologies I employed, and how these relate to the themes that emerge as significant to this object of study. I also describe the research sites and study samples, the methods I used, and the ethical and practical challenges that I faced in that process. Some of the weaknesses of my approach in light of a retrospective analysis through the lens of whiteness studies come to the fore as I show how I gathered the data and sought grounds for the analysis of the findings presented in this thesis.

Anthropological Method Beyond the Exotic

My research approach diverges from traditional ethnographic fieldwork that subjectifies the "other". Due to my proximity to the subject matter, having engaged with permaculture before I engaged with a university, I consider my point of view emic. I was a participant in the social group that I studied. The work might constitute what could be called a "native ethnography", or perhaps even an "autoethnography" "at home" (Madden 1999; Peirano 1998). My personal journey with permaculture has influenced the way in which this research has unfolded, and also constitutes part of the data that I include in my analysis. My own interactions revealed to me the networks in operation, the discourses they developed and acted upon, how they functioned in terms of the way knowledge was used and transmitted, and the kinds of practices engaged in amongst people who identified with the term permaculture in South Africa and beyond.

Falzon (2009:1) refers to ethnography as an "eclectic methodological choice" with a specific focus on daily interactions, that can include a range of methods for data collection including note-taking, audio-visual recording and interviewing methods. Participant observation is the established and definitive approach in anthropology, which means "to live, to some extent, as the 'natives' themselves do" (Falzon 2009: 1). These methods were largely formalised under functionalist anthropology, which has characterised anthropological fieldwork as entailing the long-term immersion of the anthropologist in a particular location, socially and geographically distant from the researcher's own home, aimed at recording daily interactions, understanding social institutions and, ambitiously, the entirety of "a culture". Such a narrowed and focused

approach to fieldwork led to static conceptions of culture in functionalist theory. Increasingly, culture has come to be recognised in anthropology as far more contingent and fluid, influenced by a range of historical, political and social factors - including globalisation - than the synchronic representation of small-scale societies and detailed case studies might suggest..

Multi-sited ethnography is one response to an increasingly slippery and mobile subject, social phenomena "that cannot be accounted for by focusing on a single site" (Marcus 1995:1). If, as Marcus indicates, the subject matter - a particular cultural perspective - emerges from multiple locales, then the ethnographic method should reflect that. A cursory glance reveals that permaculture is practised and promoted across the globe, and in numerous locations within South Africa. My research approach reflects that.

For Marcus (1995: 1) the "essence of multi-sited research is to follow people, connections, associations" and "relationships across space". In the context of this research, I worked in multiple sites within South Africa, across dispersed locations as I followed the social connections I discovered amongst permaculture practitioners. I also had brief international encounters that gave some direct sense of the global dimensions of this movement and how it is expressed in similar and different ways.

A theoretically and practically multi-faceted approach to research is necessary, at least for Shore (1996) to remain relevant to contemporary social dynamics where the "antiquated image of anthropology as a kind of 'managerial science' of tribal peoples ... continues to shape perceptions of the discipline" and "go beyond such as exotica as cannibalism and infibulation ... or being stereotyped as eccentric boffins who specialise in 'bongo-bongoism'" (Shore 1996: 3).

A relevant contribution anthropologists can make today may well be in the field of environmentalism. Given the inherently interdisciplinary nature of environmentalism, I have tried to employ anthropological analysis to consider the ways in which ecological concepts are employed in permaculture discourse, and which are traditionally the terrain of the natural sciences. I have also tried to provide some picture of the ecological context of the projects under consideration, which I hope

might inspire interest in permaculture practice amongst ecological scientists. Moreover, drawing on the insights and approaches of environmental history, I have tried to provide some context for the understanding of the emergence of permaculture in South Africa as one of an array of social movements that engender alternative approaches to environmental management in South Africa. Such an approach situates the emergence of these cultural perspectives on the environment as produced from particular social and historical circumstances, and reveals their connections in time and space. It also reveals the connections between perspectives, people, politics, economics and environment. Far from being unique expressions of culture, this approach allows for a less bounded subject matter.

One methodological approach which breaks with the stereotype of anthropology's fetish with the exotic is doing anthropology "at home" (Peirano 1998, Madden 1999). In this approach research is conducted at home, where the concept of "home" can be widely interpreted as national, cultural or locational. For Peirano (1998: 122), doing anthropology "at home" presents a range of opportunities, challenges and paradoxes, "where 'others' are both ourselves and those relatively different from us, whom we see as part of the same collectivity". I conducted research, conceptually, in my own subcultural "home", the permaculture movement. I worked with systems and terminologies already familiar to me, but with an interest in how they were differentially understood and implemented. I was at home for the most part: in my home nation, and amongst people and at locations that I was familiar with. Conducting research in this way lends itself to philosophical and personal bias, however, this is a risk which pertains to both etic or emic perspectives, and is one which I tried to remain cognisant of, if not objective, and attempted to maintain some critical distance in a very personalised space. Distancing myself from the discourse proved to be quite challenging, but it did provide opportunities for insights because of my own pre-existing understanding and knowledge of permaculture, but at the same time this made it difficult to see some of the contradictions in its practice which are revealed in the research findings.

One of the choices that I made in this research was to focus on one particular case study to explore the environmental practices and philosophies of permaculture in the South African context. This choice was driven by time and space constraints, as well

as the complexity that a broader perspective implied. My interest, guided by environmental anthropology, lay largely in the narratives and ecological practices engaged in by practitioners. I was interested in how informants saw themselves in relation to their concept of nature, and the kinds of practices which they engaged in which might be considered sustainable or ecologically benevolent. As such, it transpired that I was studying, in this particular case, the practices of people who would mostly be categorised as "white". It was not my intention to study environmentalism amongst "white" people as initially I had planned a broader inquiry. My fieldwork reflected that more general aim, but my writing and analysis led me to focus on "whiteness". My initial research interest was in environmental practices, and not on race, and my research questions were similarly focused. I did not enter with the intention of analysing the role of race in permaculture practice in South Africa. But, given my own positioning amongst this group of mostly "white" people, the ubiquity of race in South Africa and some of the contradictions that emerged between philosophy and practice, race emerged as a central theme in the *post hoc* analysis of the fieldwork findings.

Some personal self-reflexivity in terms of an auto-ethnographic approach provides perspective on the significance of a racialised analysis in this dissertation. I am not merely the sum of my parts, a mind in a body enveloped by a pale skin, writing a disembodied statement about the unfolding of one filament in a mesh of global environmentalism, just a strand of the emerging practice of permaculture in South Africa. My relationship with permaculture – a philosophical and technical approach to human settlement and land occupation developed in the 1970s by two Australians – has been enabled and mediated through multiple dimensions. Not the least of these have been colonialism and the institutional and intellectual bodies of knowledge and practice that grew alongside it (anthropology and ecology), but which also informed and enforced colonial management of people and the natural environment in South Africa. My current position of writing this very anthropological thesis on permaculture practice in South Africa can be tied directly within my family and my academic heritage of Western intellectual and political imperialism that initiated the systematisation of the exploitation of "non-Europeans" or "non-whites".

I write from a position of being a direct beneficiary of the work of my ancestors that participated in a system of governance, policies and practices that served to benefit, enrich and empower a minority of people of European descent that was built upon the enforcement of Africans into an exploitative wage labour economy, marginalisation to urban and rural fringes, and relegation to substandard citizenship and the material deprivations and violences that included.

This is not entirely a genealogy of European glory and conquest. There was misery and suffering, uncertainty and factors that no doubt propelled my ancestors actions (like the dictates of the military, or the authority of the church, perhaps). But it did entail at various times suppression, enslavement, murder and theft of land. This genealogy, however, more accurately reflects my heritage as a "white" and privileged South African, who has attended white government schools and mixed-race private schools under apartheid, and an elite university. I am the product of my social, cultural and historical lineage, its collective experiences, complicity in and benefit from the systems and acts of subjugation, murder and exploitation that show up in the ongoing inequalities in South African society today. My genealogy, too, is entangled with the subject matter in this thesis: in ecology and anthropology, themselves subjects that are bound to processes of colonialism and associated with such things as the development of scientific racism, evolutionary racism, the service of the state and the regulation and exploitation of colonised populations and environments. Even since decolonisation, anthropologists have been involved in providing information for nefarious purposes like U.S. Central Intelligence Agency operatives in Vietnam, the development of apartheid's ideologies and policies of separate development, and more recently in U.S.-led Middle Eastern military operations.

Anthropology and ecology have both developed out of this history of colonialism and exploitation, and provided the information to inform it, their knowledge bases derived from the environments and people they took as study subjects. They are born of the same intellectual and philosophical paradigm, and ideologies that rely on binary thinking of black and white, nature and culture, civilised and uncivilised, developed and underdeveloped – upon which Western notions of progress and development rest. I am a product of my genealogical and intellectual lineage. These lineages have been

dominated by “white” men and served to privilege “white” society, and families like my own in South Africa.

As I write this now, as a student of anthropology, peering into ecological movements and practices like permaculture, born into a family so deeply implicated in colonialism at multiple levels, and as benefiting from that apartheid policy, in an intellectual institution based on Western (European) intellectual philosophical thinking, I am shot through with privilege by virtue of being born in a pale skin, and because my parents were, and those before them. It is not a genealogy of triumph and glory, but certainly one of subjugation, warfare and the favouring of the pale skins' prerogatives and beliefs. Certainly, it is a genealogy of privilege.

Has much changed since the election of an African government? I remain involved in and studying other “white” peoples' movements and interests in permaculture, I remain studying in an academic department developed and represented by old “white” men, and in a university department still dominated by “whites”.

I am irrevocably a product of my history as a person born and categorised as “white”, even in post-apartheid South Africa. I am a product, a beneficiary of my “whiteness”, my very particular family's colonial and apartheid associations and a political system developed to benefit people who look like me, based on the exploitation and impoverishment of people not of European descent or pale enough skin.

It was retrospectively that I included a racialised analysis of my research findings. I came to the literature from whiteness studies late - and tried as best I could to find a way to bring it into the work. My own focus has been on the literature around environmental anthropology, very broadly. In part the omission of race and whiteness as a theoretical and thematic focus is a reflection perhaps of my own blindness. But it is a theme that either I have skipped over or does not appear substantially in the environmental anthropological literature. It emerges in discussions around social justice and discussions about conservation in South Africa, as shall be explored in the following chapter that deals with environmental history and social movements here. So, my broad interest was influenced by questions in ecological anthropology

particularly around conceptions of environment, and forms of environmentalism - especially ecological narratives and practices, and environmental movements.

My own academic education has been primarily in social anthropology, environmental science, history and archaeology, with courses in medical anthropology, visual anthropology, South African ethnography, and iron age archaeology and the movement of people into Southern Africa. Our education in this time around race focused primarily on constructs of race and the way in which such constructs of race and ethnicity were used to justify the elevation of European or "white" needs above the needs of people who categorised as "black", "coloured" or "Indian", as well as as the social, structural and spatial re-organisation that racial categorisation demanded in South Africa. But, race as a theoretical or analytical tool, as I understand whiteness theory proposes, has never been on my academic radar until now. It wasn't explicitly in our post-graduate curriculum nor in much of the literature I considered. Given these various oversights, internally and outwardly, I did not enter this research with a focus on race and the perpetuation of white supremacy that whiteness studies would call for. My post-graduate focus has been environmental - with interest in environmental and medicinal knowledge amongst *Bossiesdokters* (local healers of the Northern Cape Province) in Paulshoek, greywater management in shack settlements in the Western Cape and now this ecological movement of permaculture, as well as my lectures on environmental anthropology at Stellenbosch University. It was challenging for me to figure out how to integrate and deal with a whole new body of knowledge and theoretical approach into my field of research. I had to learn and integrate this and, somewhat clumsily, apply it *post hoc*. Moreover, I did not enter with these questions and didn't elicit that kind of data. However, perhaps it is these omissions and oversights that are revealing. A consequence was that there were questions that I did not ask in the process of research, and places that I did not go. What became the focal point of my analysis and the crux of my argument - the relationship between the practitioners of permaculture and their employment of "non-white" people historically disadvantaged in the process of enacting permaculture philosophy and discourse - was not the focal point of my fieldwork.

Marcus (1995: 269) points out, "it does not necessarily follow that a reflexive approach will be any less rigorous than a putatively 'objective' one". In fact,

retrospectively, this self-reflexivity seems to have provided a more nuanced and more accurate representation of permaculture practice as observed in the cases I reflected upon than my initial focus on environmental practices revealed.

Whether we take an ostensibly objective or subjective approach as anthropologists, both have certain validity and are invariably biased one way or another. Pre-empting post-modern theory, Geertz (1973: 9) alluded to the inherent subjectivity of apparently "objective" data - arguing that "what we call data are really our own constructions of other people's constructions of what they and their compatriots are up to". What this statement implies is that when we gather "data", interpret and communicate it in the form of journal articles and dissertations, we effectively re-tell and re-interpret people's stories. The funnelling of my research findings through the lens of whiteness studies provides one very particular interpretation of permaculture practice in South Africa, and potentially diminishes other analytical perspectives. Yet given the centrality of race in South Africa and the relative absence of analyses thereof in environmental anthropology, it seems a theme worthy of analysis.

Yet, dimensions of environmentalism besides race remain pertinent, as environmental anthropologists would argue. These analytical themes provide some methodological pointers for research on permaculture practice. Marcus (1995) argues that the "world system" and globalisation are integral to local permutations of culture. If we take Milton's definition of environmentalism as a cultural perspective, then globalisation would be one important dimension of cultural formulations and relationships with the non-human biotic and abiotic "environment". As numerous environmental anthropologists have shown, environmentalisms, including social movements and global hegemonic discourses about the environment, are shaped by local and global dynamics.

Tsing (2005: 1) argues in a similar vein that "[g]lobal connections are everywhere. So how does one study the global? ... Capitalism, science and politics all depend on global connections. Each spreads through aspirations to fulfil universal dreams and schemes. Yet this is a particular kind of universality: It can only be charged and enacted in the sticky materiality of practical encounters". What Tsing suggests here is that through ethnographic methods like participant observation we are able to observe

the manifestations of global dynamics and connections through intimate and even mundane social interactions and the actions of individuals. Ethnographic research entails, according to Geertz (1973: 6), "establishing rapport, selecting informants, transcribing texts, taking genealogies, mapping fields, keeping a diary, and so on." "But," continues Geertz, "it is not these things that define the enterprise" (Geertz 1973: 6). Rather, it is the contextual information that gives meaning to the various data. Being present (rather than distant) is critical "because most of what we need to comprehend in a particular event, ritual, custom, idea, or whatever, is insinuated as background information before the thing itself is directly examined" (Geertz 1973: 9). Geertz emphasised the importance of understanding the context within which interactions and enactments occur to gain a sense of their meaning and significance. In this case, globalisation forms a very broad context for studying the emergence of permaculture in South Africa, and through the kinds of methods described above, along with textual analysis, I look at the ways in which different dimensions of globalisation bring to bear upon the subject of permaculture in this context.

"Hanging out" (Spiegel et al. 1999: 180), along with participant observation is one such way of gathering ethnographic and particular information. Certainly, in my own fieldwork I had a good mix of participation through volunteer activities as well as plenty of scope to interact on a less formal level while living and participating in the activities of the research sites. While a range of particular themes for inquiry provided a more formal basis for the content of interviews and observations, I tried to remain flexible to respond creatively to changing situations (in different locations, with different people and priorities), taking Tsing's (2005: x) lead and "focus on the ethnographer's surprises rather than on a pre-formulated research plan". The idea here was to avoid imposing my preconceived ideas of what this research should constitute on the subject of the research, and rather allow each particular context to shape my approach.

Ethnographic Fieldwork Approaches for Grasping South African Permaculture

The ethnographic dimension of this research entailed an ethnography of two locations and projects. I aimed to learn how the projects operated, how they were constituted,

and their aims, methods and activities. Interviews and less formal conversations I hoped would provide deeper insight into how permaculture principles were put into practice at these two projects, and how participants in these programmes were affected by them. I hoped to learn from both project members and programme participants how the projects functioned, how participants interacted with programmes and vice versa, how participants and the organisations conceptualised nature, and what environmental management practices, as defined by the research participants, they engaged in. Such dialogue with programme participants included some personal background and life-history data, and questions around challenges and opportunities for "environmental management" and engaging with "nature" – or practising permaculture - in their daily lives.

In other words, I envisioned a general strategy which focused on individual households and their occupants in the arid zone case, and in the urban case. Through interviews I hoped to develop an understanding of participants' motivations for engaging in permaculture, and through observations and inquiry at the household level, what practical actions were taken to realise those motivations. The research also looked into the occupation of the broader landscape (through the implementation of permaculture principles and practices), and how that intersected with broader society as well as politics (through inquiries about general land-use strategies, social organisation around land management, engagements with project participants, neighbours and municipal officials, as well as analysis of local legislation that affected the occupants of land where permaculture was practised).

In exploring the permaculture movement as representing a form of environmental management in the context of hegemonic forms of biodiversity conservation, I hoped to address the following objectives and questions: to understand the theoretical and practical approaches in permaculture and how permaculture theory was actualised in the context of permaculture projects, my central questions were: how is permaculture defined? What is permaculture? What are the aims of permaculture? How is permaculture put into practice? Who practices permaculture? In what ways do permaculture practices constitute a form of environmental management? These questions were aimed to address theoretical concerns raised by environmental anthropologists around discourse and practice: effectively, how people thought about

the environment, and how they should behave towards it. They also guided inquiries into understanding how these discourses were enacted, and to illuminate the social relationships and networks that shared and enacted them.

In order to address such questions, I spent time working with each household and with individuals, and general communal activities at each location. The research entailed a range of set and open-ended interviews, casual conversation, participation in organisational meetings, assisting in and observing permaculture design courses (where permaculture ideas and practices are promulgated). These included interviews with residents or participants at each location, with course participants and ex-members of collectivities where permaculture was practised. It was through engagement with individuals that I was able to learn about new projects, and hear their stories about how they had come to learn about permaculture, what it meant to them and how they brought it into their lives.

These findings are contextualised in analysis of the intersection between these particular manifestations of permaculture and the national and international historical, political, economic and social context out of which they have developed and in which they operated – particularly through the lens of South African environmental policy.

I conducted 18 months of fieldwork based at two organisations in the Western Cape province of South Africa that drew upon the discourse of permaculture to guide their activities. I spent 6 months full time at each location, and the remaining 6 months following up with participants in these permaculture practices who were not physically located at the research sites. In terms of anthropology's traditional approach to fieldwork of long-term immersion, this seems a short time to gain an in-depth understanding of cultural practices. This was a result of the short time frames permitted in the funding requirements. However, I would like to think that my prior engagements over a number of years allowed quicker access and an existing engagement with the subjects and a deeper engagement than if I had actually come to the subject matter absolutely naively. Nonetheless, the short period of research meant that the research findings were chronically synchronic and do not reflect transformation over time.

I have kept the identities of the organisations and individuals anonymous in the detailed case studies when appropriate and when sensitive issues arose. The first organisation was a Not-for-Profit Organisation (NPO), which I refer to as the Arid Zone Permaculture Initiative (AZPI), located in the semi-desert of the Western Cape province, and was at once a residency and a training facility for teaching people about sustainable living through permaculture practice. The other was a Public Benefits Organisation (PBO), Permaculture Education in Schools (PES), based in the Cape Flats area of Cape Town, whose mission statement was to provide environmental education and nutrition to under-resourced schools.

I lived at the AZPI project for 6 months in various residents' homes. It was a project that family of mine was a member and resident of, and with permission of the rest of the members, I was given near free-rein my fieldwork pursuits. I volunteered on the farm, and I interacted on a daily basis with residents. I also attended permaculture design courses delivered here and at other locations by some of these residents. Here, I was able to see how permaculture was being put into practice on the land, and the kinds of issues that arose in doing so. I was also able to speak with residents about their reasons for participating in this project, and their experiences in doing so. Many had been involved in permaculture for more than a decade, and I was also able to learn about the history of permaculture in South Africa through their experiences. I also consulted with some neighbours, labourers and people living in the nearby town. I spent three months following the threads of the far-flung network.

By interacting with this project and the residents living here, I was able to connect to the broader network of permaculture practitioners and acolytes, as well as ex-members who had left the project. This gave me access to the wider permaculture community in the Western Cape and beyond. I visited students and ex-members in various locations in and beyond the province, on the advice of residents. I was also able to interview students during courses, and volunteers and visitors who came to visit the farm. I assisted in farm tasks, took care of homes and gardens, and socialised with residents, students and the wider community. I was also able, there, to see how permaculture design theory was put into practice on the land, and how it was expressed socially. I have used data from this site to inform the detailed case study of permaculture being put into practice.

At PES, I similarly volunteered for 6 months, and did follow-up interviews in the three months afterwards. Through my connections and interactions with the participants of the AZPI, I was already familiar with the PES staff, and they with me. In fact, two years prior to the research I had done some part-time work for the organisation. Once again, I felt that I was given just about an open door to conduct my research there. Here I did some work in the garden as well as in the office, and attended many meetings. I interviewed staff, ex-staff, students and participants in the programmes. I attended and even delivered courses. I trawled through documents, and interviewed founding members. Together this allowed me to develop an understanding of the organisation's operations, intentions and as history. I decided to provide a detailed case study of just one of these sites to provide a fine-grained account of how permaculture theory was used to inform land management, and inform social organisation. I lost the opportunity to show permaculture expressed in different ways and contexts. Instead, I took the opportunity to use interview data derived from the networks of both organisations to provide a broader perspective on the historical development of permaculture in South Africa, its development and the emergence of the discourse amongst these networks. I used data gained through my interactions at PES and AZPI and beyond, to provide a picture of the emergence of permaculture in South Africa, the dynamics of the social network that has emerged around the notion of permaculture here, and to get a sense of how the discourse of permaculture has been taken up through these networks.

I documented the fieldwork through assiduous note-taking, video recordings, photographs and hand-drawn maps of land-use and domestic vegetation patterns that were corroborated with Google Earth imagery. I further tried to get a sense of the local ecologies through observation and questioning research participants when possible. This understanding of local ecologies was backed up by consultation with plant guide books.

My fieldwork in both cases was rooted to a particular location and designated community, but they were both communities that extended well beyond the confines of their properties. I was able to interact with the broader community of permaculture in South Africa at festivals, open days and various gatherings, alongside the

interviews which took place outside of these locations at participants' homes. I tracked down individuals who had been identified as core participants in permaculture's early days in South Africa by those I had already interviewed, in order to get a sense of the movement's history in this country.

I had two international asides which contributed to my understanding of permaculture as part of a global network of practitioners, alongside interviews with internationals who became involved in permaculture in the organisations where I conducted fieldwork. The first was a volunteering stint at a festival in Portugal, which was initially going to be one of my research sites when my proposal was far too ambitious. Here I was able to engage with people from across the world who knew about and practised permaculture, and I was able to gain some insight on how permaculture was being used as inspiration to make this festival more ecologically sustainable. The second was a permaculture facilitators course that I participated in in Portugal after some conferences I attended in the capital city. Both these experiences allowed me some vision of permaculture operating at an international level in person, beyond the experiences of interviewees in South Africa.

I further engaged in on-line discussion forums and interest groups, primarily through Facebook, an on line social networking platform. Here I was able to connect with a wider network of permaculture practitioners, both locally and abroad. I could observe some of the content being posted on pages, and discussions that took place in groups, and also participate in it until such time as my account was suspended because I did not use the name on my identity document. I refused to submit my identity documents to reinstate the account on a matter of principle. This cut me off from many of the people and platforms that I had spent almost three years building. It demonstrated to me the limits of a centralised internet-based social network. I was able to locate some permaculture content through videos posted on an on line video platform called Youtube, which allowed me access to some of the permaculture discourse which has not yet been documented in written texts.

In terms of gaining an understanding of the permaculture discourse in its more formal manifestations, I consulted with texts considered seminal in the permaculture world – some of which were recommended to me by connections on Facebook, and others

which I found on permaculture reading lists purveyed on websites dedicated to permaculture. This provided a foundation for me to begin to analyse what the more formal definitions and primary discourses of permaculture were, alongside the meanings and definitions that I learned about through interviews and ethnographic fieldwork.

This range of methods and approaches that I employed allowed for me to gain a sense of the movement's history and trajectory in South Africa, how permaculture was conceived of and interpreted by practitioners, how it was manifest on a physical and social level, some of the internal contradictions and conflicts amongst practitioners and practices, the challenges that these organisations and the individuals involved faced in trying to do so, as well as what was produced by them. These fieldwork findings have been situated in a discussion about the political and historical emergence of environmentalism in South Africa, as well as what I may term official permaculture discourse as drawn from the permaculture literature. By doing this I hope to have been able to provide the basis for exploring how the notion of environment and its conservation have been taken up both in the locations I worked where permaculture was practised, and how it is brought into being in South African state policy and practice. In this way I have tried to bring to light some of the congruencies and dissonances between permaculture practice in South Africa and the political and economic context within which the particular permaculture project I detail operated.

Fieldwork Challenges

A range of challenges that emerged when I was conducting my fieldwork in these two locations, which link to some of the ethical discussions which follow. A recurrent challenge was that my vehicle needed constant attention, and at times I was unable to drive to my fieldwork site in the Cape Flats in Cape Town. At such times, I would dedicate my energy to writing papers for the conferences that I attended. I tried to instead take public transport from my home. However, it took two hours to travel the 35km there, and another two back. Moreover, the area was not considered safe due to ongoing gang violence, and I was not prepared to hang around at bus stops in the late

afternoon with my laptop that was necessary to for my work, as I was already experienced in muggings and robbings and did not wish to deal with it again, nor could I afford to lose my work. Crime presented itself as a challenge, because there were times that I would arrive at the school and find that there had been shootings and murders, or that the police had warned the local residents to stay off the streets and certain times due to planned gang conflicts. At these times I would go home or not go to site. On the farm, my car became worse for wear due to the very rough roads, and had to be repaired more often than usual, not to mention mice eating the electrics of both my car and my computer, which provided some setbacks. This was costly in both time and money. Lastly, week-long wildfires that had me evacuate my home also kept me out of the field for a week. Overall, however, I did not experience any major setbacks whilst conducting this research.

Research Ethics in a Home Environment

This research is grounded strongly in the ethical foundations of anthropology, and with respect for the ethical basis of the permaculture movement which I have chosen to study and immerse myself in.

The American Anthropological Association (AAA) (2012: Online) ethical guidelines emphasise the influence that researchers have on the groups of people with whom they work. In this light, we are encouraged to consider our own assumptions and values, and remain aware of not imposing these ideas on the people we work with. We also recognise contributions that those people make to our own research, with an ideal of reciprocating such benefits. In other words, anthropological ethics recognise the interconnectedness between the subject and the observer. We are also encouraged to take seriously the views and values of others.

The AAA (2012: online) contends that anthropologists have moral obligations to other human beings, as well as the scholarly discipline. And, in the field we are likely to find that our own value systems are challenged by those which we encounter. The association puts forward guidelines for us to follow when conducting anthropological research, which are easily transferable to environmental practice, particularly in a

context where humans are being increasingly seen as part of the environment. These guidelines, intended to steer anthropological research, regard both human and non-human entities as worthy of respect, and the consequences of our actions for such "communities" need to be taken into consideration, and negative impacts foreseen and avoided.

Underlying these ethical guidelines are certain themes – honesty and communication, respect for both humans and non-humans, a recognition of the gains and losses to be made from the research, as well as an awareness of the motivations for research and the impact that research could have on the people under study.

The correspondence between these ethical guidelines and those which guide permaculture practice, namely 'People Care', 'Earth Care' and 'Surplus Share' (Holmgren 2002), can easily be recognised - a shared underlying concern with human well-being, an explicit concern with non-human well-being, and lastly sharing and reciprocating the benefits of the research.

In line with the social concerns of the AAA's ethical guidelines, verbal informed consent set the course for my ethnographic research. Anthropological ethics, including respect for informants and their privacy and dignity guided my research decisions and actions, and included a regard for my own safety and that of my informants. This would include keeping potentially harmful or explicitly confidential information that came to my attention confidential. Given the close connection between practitioners in the field, it becomes easy to identify them according to descriptions that are offered. In some cases, I have chosen to use pseudonyms, in others not, depending on the context and whether they wished to remain anonymous or not. However, for those familiar, it would be easy to identify the places and people involved in this research, and for this reason I have taken extra care about the information divulged herein without compromising the integrity of the research.

However, a number of ethical issues did arise. One was indeed the use of fossil fuels. I had mentioned earlier. Whilst working in Cape Town, I travelled 70km a day to get to the project and back. I tried public transport once, but it cost the same as driving my car, and took four hours a day, and by the end of it I was exposed to petty or not

so petty crime. This links to another ethical issue, which was exposing myself to crime in this area, something which the participants of PES did on a daily basis. That formed part of the participant-observation experience that I could share with them, but it was nonetheless trying.

Another ethical issue was related to my nativity to permaculture, which would lend itself to bias. I have explicated my position as both a family member, friend and participant in the permaculture movement in the Western Cape and South Africa. My research made me even more involved as time passed and I met more people. This nearness to the object of study is widely recognised as lending itself to bias, or to portraying the movement inaccurately and in a more beneficent light than it actually is. Moreover, being familiar with many participants meant that I gained access to conversations, documents, meetings and so forth that I do not believe a non-participant would have had. I was party to information that was not meant for public consumption. I had personal interactions that affected me. These all raised ethical issues in their own ways. In one sense, I had to decide for myself what I could share or not, and mostly people took it for granted that I would deal with the information shared with me with sensitivity. In the verbal consent process I delineated that information that the informant did not want shared would be kept confidential, and I would try to foresee any complications of revealing information that was shared and not off the record. That does not mean that I would not represent the movement fairly – i.e. as more coherent or more beneficent than it actually is. In fact, because I had interactions that I also found frustrating, at times it made me biased *against* certain dimensions of permaculture practice. It is possible also that I was provided with more positive feedback than people actually felt, because I was friends and family of people who were very active in this movement. For this reason I have had to carefully consider what data to include in this thesis without compromising the organisations that I worked with, other people's professional and personal relationships, my own relationships with people the community, and the research itself.

My close proximity to the research subjects provided further ethical and research dilemmas. One such issue was that the project under scrutiny was engaged in legal disputes with one set of neighbours who were described to me as rather antagonistic

towards their operations, and at times even violent. On these grounds I did not visit the apparently hostile neighbours in case my actions in any way compromised the legal case, caused further antagonism between them, or brought harm to myself. Perhaps this reflected a lack of courage on my behalf and self-preservation on the part of my research subjects, but it was a risk that I was unwilling to take.

Besides my personal interests, I do care about respect, and honouring the information and relations that I was entrusted with, while at the same time providing a fair and honest portrayal of my ethnographic findings. The first ethic of anthropology is to do no harm, and it is from this ethic – and that of people care as well as honesty – that I have begun in terms of representation in this work.

In terms of reciprocation, I hope that the information gathered and analysed as I propose might be useful for the organisations' understanding of themselves and the effects of their programmes on participants (and vice versa), and similarly for programme participants, and in this way offer some returns. Certainly, a good number of informants expressed enthusiasm and support for this work and requested to see the final product. Similarly I would hope that my physical contributions volunteering in gardens and on programmes were of help to both the organisations and their participants.

The methods and approaches that I employed in conducting the research for this thesis reflect those used traditionally in anthropology that has sought to elicit and understand people's beliefs and practices, and the broader dynamics that influence them.

The subject matter under scrutiny - an emergent global ecological social movement as practised amongst a majority of "whites" in South Africa - and the methodologies I employed - raised issues around positionality and subjectivity, and in turn race. The findings elicited out of the methods, methodologies and subject matter are presented and analysed with reference to permaculture's broader global context and history, and that of environmentalism in South Africa and light of the theoretical questions raised in environmental anthropology, social movements theory and whiteness studies.

Chapter 5: Spores from the Antipodes: Permaculture history, global trajectories and globalising environmental discourse

Academic and anthropological perspectives on ecological social movements call for a multidisciplinary approach to addressing sustainability and environmental issues facing society today. They guide the analyst to look to social movements and knowledge generated in non-industrial societies for models of sustainable living and to overcome the physical manifestations of dualistic notions of human-ecological relationships that posit human needs above all else. We are called to look into social movements that engage with neoliberal politics and economics, and provide alternatives to these while recognising the negative environmental consequences of these kinds of economics. Theorists suggest that we look at the discourses and practices of such movements, and to understand their development and historical trajectories to get a sense of their potential for effecting change.

Social movements theory and environmental anthropology raise questions around how to identify social movements, their aims and goals, forms of protest, origins and trajectories. Their interest lies in identifying "regimes of nature" and environmental universalism, and to understand what kind of knowledge is used to in their operation. We are also called to seek out the similarities and contradictions between neoliberal ecological discourse and those of social movements, including the gaps, contradictions, limitations and overlaps that emerge in such an analysis. This is in order to identify new narratives and practices for informing new human-ecological relationships and bringing about a more ecologically and socially sustainable world in our human lifetimes.

For many of these authors, it is important to seek out alternative sources of knowledge, and alternatives to global capitalism even if if their imaginings for the world are fantastic and problematic. The new ideas they introduce or new ways of thinking about human-ecological relationships need to be explored alongside their problematic or contradictory elements, because they offer the potential if not to rattle entire hegemonies, then maybe hegemonic thinking.

Environmental anthropologists with an interest in social movements ask how environmental universals are constructed and how they function (Tsing 2005); in what contexts do ecological and wisdom - and myths surrounding these - emerge; and what it means when these universals, ideas and new forms of knowledge are applied in other situations (Milton 1996). They draw our attention to the nexuses of history, biology, economy and politics, and the particular dynamics that give rise to social movements in specific times and places.

The whiteness studies literature raises questions for environmentalism - and permaculture in this case - in the South African context where society has been largely shaped by race-based policy. This literature asks questions around privilege associated with race which foregrounds the cultural points of view of light-skinned people, their access to these racialised cultural spaces and the erasure of the experiences and perspectives of dark-skinned people and the ways in which the same processes preclude their cultural points of view and access. The issues raised in whiteness studies around privilege and access introduce an additional lens through which to scrutinise environmentalist movements like permaculture - a pertinent pursuit in the case of post-apartheid South Africa.

The historical contextualisation provided in this chapter, analysis of the conditions that gave rise to the permaculture discourse and the discourse itself, attempts to address some of these questions. Environmental anthropology calls for an analysis of environmentalism as a cultural perspective, ideology and social movement; as historically produced and constituted through particular economic, social and environmental confluences. Whiteness studies call for a race-oriented and historically contextualised perspective.

In this chapter I present a limited history of the development of permaculture theory, discourse and practice. Drawing on a range of permaculture literature - books, academic analyses and online sources - I have attempted a brief and far from exhaustive account of the history of this movement. A more informed historical and theoretical account could include the wide array of audiovisual resources developed amongst permaculture practitioners, along with radio broadcasts, web sites and chat

forums that touch upon them. Being ethnographically focused, such an account is beyond the scope of this thesis.

This historical contextualisation illuminates some of the thinking and the conditions that gave rise to the emergence of permaculture as a global environmental social movement. Attention to the definitions, design strategies, ethics and principles promoted in permaculture theory sheds light on the discourse and the kinds of knowledge employed in permaculture thinking and practice. I pay close attention to the ecological theories and notions of indigenous knowledge that have come to inform the ethics, principles and design strategies that are employed in permaculture and characterise it as both a global social movement and a form of agroecological practice. Together, their analysis allows some of the questions raised in the theory considered.

A Brief History of the Permaculture Concept and its Global Dissemination

While often confused with organic gardening (Holmgren 2011: 28), permaculture is understood as one amongst an array of agroecological movements that propose alternatives to industrial agriculture, and shares some of the principles and themes emerging in the agroecological literature. It is distinguished by its emphasis on perennial polyculture, water management and design (the placement of elements in an agroecological system) (Sass-Ferguson and Rafter 2014: 274). Along with the ecovillage and bioregional movements, permaculture is seen as a descendant of the counter-cultural utopian lineage. Rather than oppositional or escapist, it is seen as ecotopian and characterised by the seeking out of connection (Lockyear and Veteto 2013: 24). Its roots are traced even further back in history, to late 19th century discussions and concerns about human settlement design in the context of industrialisation and urbanisation (De Roo and Silva 2010).

According to one of the permaculture co-founders, David Holmgren, there is no written history of the permaculture movement to provide a "factual context for the exploration of more personal stories" (Holmgren 2011: 19). There are articles and personal reminiscences recorded on web sites that provide insight into the history of permaculture, as well as the kinds of discussions entertained on online social

platforms such as the Permaculture Research Institute of Australia's online forum (PRI 2016: Online). Dawborn and Smith's (2011) publication, Permaculture Pioneers, provides anectodal accounts from Australia that refer to its historical development there. I draw on these various sources, as well as some of the seminal texts in the permaculture literature (in particular, Mollison 1988) to provide a picture of that history.

Between 1972 and 1974, Australians Bill Mollison and David Holmgren worked on developing an "interdisciplinary earth science" (Mollison 1988: ix) which came to be termed "permaculture", a conjunction of the words "permanent" and "agriculture". The term was coined before sustainability debates had become mainstream (Scott 2010: 15), following the "ferment of the late 1960s" that rejected "aspects of global society … military adventurism, the bomb, ruthless land exploitation, the arrogance of polluters, and a general insensitivity to human and environmental needs" (Mollison 1988: ix). According to Holmgren (2002: xi) permaculture "was a response to the environmental crisis facing modern society" and could "provide leadership on a larger scale" in that context (Holmgren 2011: 24).

An informal history published online by a permaculture practitioner in Australia provides some insight into the development of the counter-cultural movement in there. By Grayson's account, in the years prior to the publication of Holmgren and Mollison's texts, a back-to-the-land movement had emerged amongst Australian youths who shared the conviction that a return to rural life would effect social change they saw as necessary. Publications pre-dating Mollison and Holmgren's (1978) Permaculture One included *Mother Earth News* and the *Whole Earth Catalog*. Grayson explains, "*Mother Earth* was available in Australia if you knew where to look for it, and the stories it carried sparked ideas in the imagination of many who read it. So did the *Whole Earth Catalog* … Add to these publications *Earth Garden* magazine and you had the start of an alternative literature that supplemented books that appeared around the time, such as Buckminster Fuller's Operating Manual for Spaceship Earth" (Grayson 2010: Online). The development of the permaculture concept in Australia was evidently not unique and, as shall be shown, likely to have been influenced by such publications as the *Whole Earth Catalog.* It was part of a broader and increasingly global social movement emerging in the USA and Europe, in

particular, that sought alternatives to the kinds of answers proposed by the governments and instruments of power at that time.

Mollison's professional background was in biology, biogeography, and environmental psychology, and between the 1950s and 1970s his work included macrofaunal surveys, research on forest regeneration and the documentation of Tasmanian aboriginal history and genealogies (Mollison 1988: iii). Holmgren was his student who had studied environmental design and was interested in "how landscape, design and ecology could be applied to agriculture" (Holmgren 2011: 22).

Holmgren's master's thesis formed the basis for the first permaculture text to be published in 1978, Permaculture One. For Holmgren, its publication marked the "starting point for both the evolution of the concept and the emergence of the worldwide permaculture movement" (Holmgren 20002: xv). The concept was informed by a range of thinkers, including ecologist Eugene Odum (1974), natural farmer Masanobu Fukuoka (Japanese author of The One Straw Revolution (1978), and developer of the "natural farming" philosophical approach to agriculture), and Mollison's work with Tasmanian Aboriginal peoples and engagement with Taoist philosophy (Hathaway 2015: 6). P.A. Yeoman's "whole landscape approach" to "landscape analysis with whole farm water management, agroforestry [and] soil-building strategies" including off-contour chisel ploughing and rotation grazing (Sass-Ferguson and Rafter 2014: 254) was also influential. The formulation of the permaculture concept and theory has also been credited to older publications such as Albert Howard's (1943) An Agricultural Testament and Franklin King's (1911) Farmers of Forty Centuries: or Permanent Agriculture in China (Bates and Hemenway 2010: 48).

Although permaculture gives attention to broader land use management through the use of such technologies as the keyline plough, its traditional or focus has been on "the small, the local, and the personal" (Dawborn and Smith 2011: xiii) and agriculture and food systems (Slaughter 2011: 9). It has more recently expanded to give attention to broad scale strategies (Dawborn and Smith 2011: xiii) and "elements of our cultural landscapes … around which we organise our communities and societies", what are referred to as "invisible structures" (Slaughter 2011: 9).

Mollison established the Permaculture Association of New South Wales in 1978, and the *International Permaculture Journal* in the same year (Holmgren 2011: 23). It was followed by the publication of Permaculture Two in 1979. At this point Mollison left academia and focused on promoting permaculture both in Australia and abroad. According to Mollison, the first official permaculture design course was taught in Australia in 1981(Mollison 1988: ix), followed soon after by one in the USA in 1982 (Scott 2010: 2). The first Permaculture Conference was held in 1984 in Australia (Mollison 1988: ix), and the second in the USA in 1986 (Scott 2010: 4), leading to the launch of the US-based *Permaculture Activist* publication and the Permaculture Institute of North America in 1985 (Scott 2010: 4), paving the way for permaculture to be taken up inter-continentally. Conferences have since been held in, amongst other places, Brazil, Malawi, Cuba and England. Various publications were also developed, such as the *Permaculture International Journal* in Australia, *Permaculture Activist* in the USA, and the *Permaculture Magazine* in the UK (Grayson 2010: Online).

Although the concept had generated interest early on, Holmgren himself expressed some doubts about his own lack of practical experience "to back up the conceptual nature of permaculture" (Holmgren 2011: 23) and Mollison's "tendency to talk up our achievements and those of others as evidence of supporting permaculture", and identified the "seeds of dogma and rigid ideology developing in the permaculture movement from the early days" (Holmgren 2011: 24).

Yet, by the mid-1980s participation in permaculture had grown from ten permaculture groups in Australia to about 80 across the world (Grayson 2010). By 1991, Mollison tells us that there were 54 teaching centres, 80 teachers and 6000 students throughout the world (Bell 1992: 13). Speeches made available on the International Permaculture Convergence held in England in 2015, based on a world-wide survey by an online platform called Food Tank tells us that there are now more than 1 million people certified in permaculture and over 4000 permaculture projects operating in more than 140 countries. The Permaculture Research Institute of Australia (PRIA) has 1851 self-registered permaculture projects on its database, represented on a world map by location (see fig. 1 below).

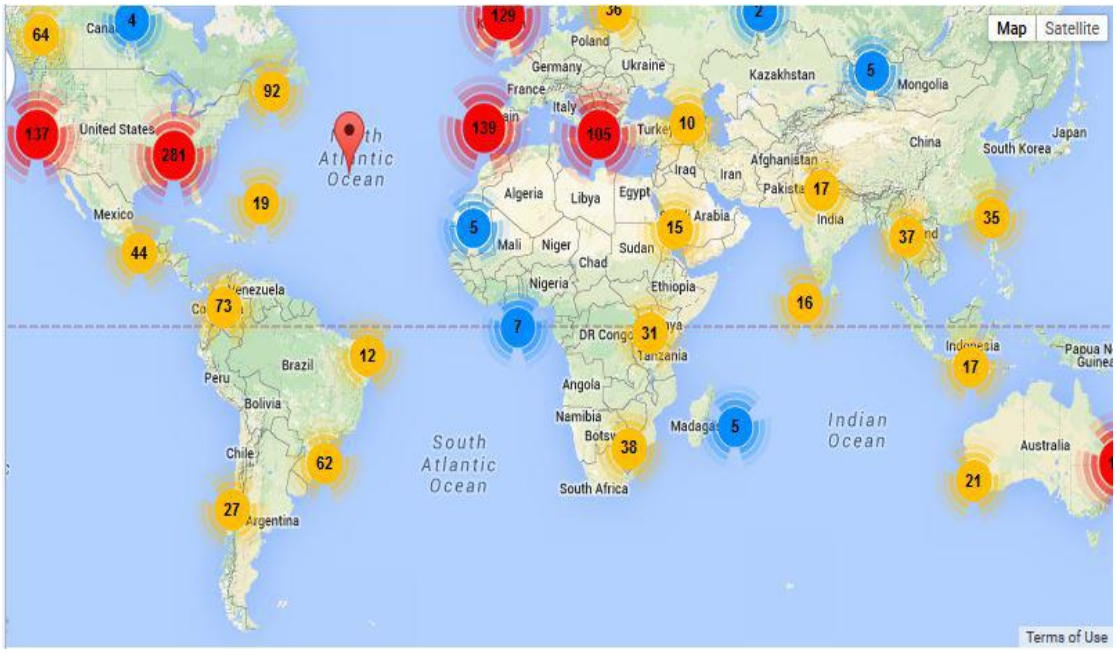


Fig. 1: A map of worldwide permaculture projects listed on the PRIA's website, displaying the number of self-registered permaculture practitioners by region.

Sass-Ferguson and Rafter (2014: 265) show that permaculture knowledge and practices move through two main channels – an international network of nomadic teachers, and the development of localised bioregional organisations including alternative economic and social institutions. One notable example is the Transition Town movement that employs permaculture strategies for bioregional and localised settlement sustainability planning (Dawborn and Smith 2011: 189 and Clayfield 2011: 189).

According to Scott (2010: 3) the primary channel through which the permaculture concept is spread is through a two week permaculture design certificate (PDC) course. The PDC is described as a "community-based approach to education" (Scott 2010: 15) accessible to the public, and an "informal community education system" (Gamble 2011: 313). The course protocols were established by Mollison at the Permaculture Research Institute (Scott 2010: 3). The concept is also communicated and learnt through a range of conferences, magazines, web sites and teacher's manuals (Scott 2010: 3), and through training programmes, websites, books, podcasts and Youtube videos (Hill 2011: 325). A PDC can be conducted online through the Permaculture Research Institute of Australia, and there are many audiovisual resources available for both technical and philosophical information on permaculture. Websites abound that

such information, and chat groups where advice can be sought, and debates and discussions raised.

Mollison established a curriculum for the two week PDC that was codifed in 1984 (Holmgren 2013: 4), and stated that "the word 'permaculture' can be used by anybody adhering to the ethics and principles expressed therein. The only restriction on use is that of teaching: only graduates of a Permaculture Institute can teach permaculture, and they adhere to agreed-on curricula developed by the College of Graduates of the Institutes of Permaculture" (Mollison 1988: ix).

While there is a specified curriculum that largely follows the structure of Permaculture: A Designer's Manual, the content varies from place to place and teacher to teacher, and provides "a general theory that is adapted to local environments" (Scott 2010: 3 and Holmgren 2013: 4). The curriculum usually includes construction of human settlements, permaculture design principles and ethics, model systems, food production, sanitation, alternative energy, farm layout, soil management and building materials, as well as hands-on practical design implementation (Scott 2010: 3).

Mollison (1988: ix) explains that the "graduates form a loose global network, and are effectively acting in many countries". For Holmgren, the PDCs have acted to create a "cadre of self-selected designers, activists and further teachers that, combined with Bill's not insignificant media presence, spread permaculture throughout Australia and the rest of the world" (Holmgren 2011: 20), and "has acted as a social glue bonding participants to an extent that the world-wide network [that} could be described as a social movement" (Holmgren 2013: 4). For Geoff Lawton, who inherited the Permaculture Research Institute of Australia, it was a humble approach and way of spreading the concept: "Bill basically said, 'Go out and do it'." (Lawton 2011: 100).

Mollison further claims that the permaculture movement "has no central structure, but rather a strong sense of shared work. Everybody is free to act as an individual, to form a small group, or to work with any other organisation. We cooperate with many other groups with diverse beliefs and practices; our system includes good practices from many disciplines and systems, and offers them as an integrated whole" (Mollison

1988: ix). Gamble (2011: 313) similarly refers to permaculture as "de-institutionalized and autonomous, yet within a strong international network and framework of understanding". For Sass-Ferguson and Rafter (2014: 265) this lack of centralised structure and management hinders coordinated action beyond local community scale and therefore its potential to mobilize "political support for diversified farmers".

Permaculture Definitions and Socio-ecological Discourse

The environmental discourse promoted in permaculture which is spread through a global network of participants, practices and channels described above, can be ascertained from permaculture texts that provide definitions of permaculture, and elucidate the ecological theories that are employed to drive social action. Analysis of these definitions and the way that ecological theory is used provides insight into the kinds of knowledge employed in permaculture discourse, how it is intended to be used, and the kinds of universalisms and regimes of nature it assumes.

One definition Mollison (1988: ix) provides for permaculture is: "the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter, and other material and non-material needs in a sustainable way. Without permanent agriculture there is no possibility of a stable social order."

Since its inception, permaculture's definition has shifted to include not just permanent sustainable agriculture, but culture too (Holmgren 2002: xix). Mollison elaborates on the above definition: "design is central to permaculture's pursuit of creating stable, self-sustainable human and agricultural settlements that mimic the structure of natural ecosystems". These pursuits are to focus on "already-settled areas and agricultural lands", and integrate food supply and settlement, locating these near to forests that can supply foods and process wastes. According to Mollison, making already-settled lands productive and self-sufficient should free up "most of the area of the globe for the rehabilitation of our natural systems" (Mollison 1988: 6). In this perspective,

ecological conservation and social stability are to be achieved through considered design of integrated human settlements and food production and consideration of local ecological factors.

For Mollison, permaculture does not represent something new as a system for design, as it entails reorganising existing elements, "what is already there" (Mollison 1988: 9), to become more energy efficient and productive in the context of energy and resource decline and environmental crisis (Holmgren 2002: xv, xiv). This is to be achieved largely through prioritising "existing wealth" and rebuilding natural capital especially in the form of trees and forests, which are seen as repositories of actual wealth (Holmgren 2002: xiv). Paradoxically, what Mollison says is novel or even revolutionary about it is that it is a system, like any other, of "common-sense design" (Mollison 1988: 9).

Permaculture is concerned with food production, ecological conservation, resource and energy efficiency, as well as social change. The role of the individual and household for bringing about change at the "market, community and cultural level" (Holmgren 2002: xvi) is emphasised, and to be achieved through the redesign of human settlements, production, consumption and waste such that people shift from being "dependent consumers" to "responsible and productive citizens" (Holmgren 2002: xix). For Holmgren, permaculture holds the promise of contributing to a "popular culture of sustainability, through the adoption of very practical and empowering solutions" (Holmgren 2013: 5). Mollison's Permaculture: A Designer's Manual (1988) contents suggest the wide sweep of permaculture's lens, from ecological and physiological concerns to the social, including themes on climatic factors, trees and their energy transactions, water, soils, earthworking and earth resources, the humid tropics, dryland strategies, humid cool to cold climates, aquaculture and last, strategies for an alternative global nation.

Permaculture is centred on design, and has a certain moral imperative that we should become "responsible and productive citizens" who are energy conscious, localise our production and consumption patterns, redesign our settlements and conserve natural ecological systems. From this perspective it can be seen to be largely conceptual and ideological in nature and informs an imperative to act. For Mollison, it provides a

framework that takes ecology as a guiding principle, and can integrate different forms of knowledge that can be put to those purposes (Mollison 1988: 76).

For Sass-Ferguson and Rafter (2014: 266) permaculture posits a theory of human-environment relations that challenges a dualistic perspective found in "growth-oriented development" and "preservation-oriented conservation", which tend to foreground competitive human ecological relations. By contrast, permaculture sees human-ecological relations as potentially co-operative, with humans as "ecosystem managers" (Sass-Ferguson 2014: 266) at least as far as those areas which we do settle in or cultivate.

Discussions about the definition of permaculture reveal aspects of its discourse, the aims and goals of the movement, and the kinds of problems for which solutions are sought within that discourse. The principle aim of permaculture, it seems, is to create an alternative to industrial and capitalist economic and political systems that are seen as the cause of ecological degradation and social malaise. It is imagined that political, economic, social and environmental change can be effected at the systemic and global level if human needs could be seen to through integrating agriculture and productive (economic) activities with natural ecological systems and existing landscapes. This is to be achieved through the application of scientific ecological theory and knowledge, and informed by "traditional" knowledge and wisdom in the local ecological context, in the design of human settlements and start at the individual and community level. Conservative and efficient resource use and ecological conservation are emphasised, and the position of humans as a part of nature, or ecological systems, is foregrounded.

Ecological Theory and Indigenous Knowledge in Permaculture Discourse

Ecological theory and knowledge underpin the discourse and practice of permaculture, providing both practical and philosophical guidelines for practitioners. Indigenous knowledge is also drawn upon for inspiration. Mollison's views on ecology were influenced particularly by Odum's whole systems energy flows theory, Watts's principles of ecology and the ideas of Australian Christian ecologist, Charles Birch (Mollison 1988: 6). Mollison recognised that these theories are not immutable, saying

that “there will never be laws in the area of biology because life is always in a process of change” (Mollison 1988: 13). These ecological theories and laws are intended not so much as rigid rules as to guide the design of cultivated ecosystems.

Energy flow was one ecological concept that Mollison absorbed into permaculture theory. Odum’s theory recognised energy exchanges between organisms in a living ecosystem, and proposed that a self-regulating ecological system can be engineered if the inputs and outputs of individual components within a system, and the energy exchanges between them, were understood. Through careful selection of species in a cultivated system, a grower could maximise the energy exchanges between them. This is supposed to reduce the need for human and material inputs and increase production for human consumption (Sass-Ferguson and Rafter 2014: 253). Mollison (1988: 7) refers to this as a “cultivated ecosystem”.

The “law of thermodynamics” and “entropy”, understood here as a process by which energy dissipates as it moves through biophysical systems, leads to a directive in permaculture theory to maximise the use of energy before it becomes unavailable, and translates into a question of how to make best use of energy before it leaves a site or system. The strategy in permaculture, says Mollison (1988: 13) “is to set up an interception net from 'source to sink'. This net is a compound web of life and technologies, designed to catch and store as much energy as possible on its way to increasing entropy.”

Notions like “ecological web” are favoured over “trophic pyramids”, where humans are seen as connected in an ecological web and to natural cycles and processes (Mollison 1988: 28). Change is emphasised over static “climax” theory in permaculture, where local ecologies are seen as wavering between phases of self-regulation. . These notions of dynamism and connectedness in ecological theory translate to goals in permaculture, such as being “[t]o enable a cultivated system to evolve towards a long-term stable state”. The means imagined is through the engineering of productive ecologies, where “we can construct a system of mixed tree, shrub, and vegetable crop, utilising livestock as foragers, and carefully planning the succession of plants and animals so that we receive short-, medium-, and long-term benefits. Unlike the process of nature, we can place most of the elements of such a

succession in one planting" (Mollison 1988: 64).

The different elements of a system are selected according to the functions they provide (e.g. food, wind shelter, fodder) and placed near to others according to their characteristics, inputs, and outputs. This requires, according to Mollison, an understanding of how different elements function and can interact. Various other ecological concepts come to the fore in the way that permaculture makes use of Odum's notion of energy flow and ecological engineering along with dynamism and connectedness: complexity, diversity, relationship and function. Complexity in this perspective is "taken to be the number of functional connections between elements (Mollison 1988: 31). Diversity is conceived of as "the number of different components or constructs in the system" (Mollison 1988: 32) in a cultivated ecology. Function and relationship are emphasised over diversity, which is not seen as an end in itself, and does not guarantee productivity. It is suggested that there is a threshold of diversity of elements that will enable a cultivated ecology to be productive and self-regulating. Multifunctionality of species, their connections and functional relationships are prioritised over diversity (Mollison 1988: 32).

The ecological concepts employed in permaculture - in particular, entropy and energy flow - are translated into design guidelines and principles in permaculture theory. Based on the idea that ecosystems could be constructed and made productive through considered species selection, permaculture design emphasises the relative placement of living and non-living components within a cultivated system to maximise its productivity, minimise external material and human inputs, and engender the production of its own resources within that system and eventual self-regulation. At the same time, humans are seen as a component of the ecological system and our habitats, rather than seen as separate from or above them. Dynamism, fluidity, connection, diversity, complexity, relationship and function are implied in the enactment of these theories in the creation of cultivated ecosystems that include human social and material reproduction. These ecological concepts are easily identified in the practical and philosophical imperatives of the discourse.

Culture, knowledge, ecology, community and indigenous knowledge – concerns shared with anthropological and social movements theory - all come to the fore in

permaculture theory. It constitutes a critique of modern industrial capitalist relations of production and the politics they engender, and guides one to look at natural systems and non-industrial societies in the search for alternatives. Mollison draws attention to belief systems and mythologies which “assert the interdependence of animate and inanimate events” (Mollison 1988: 99) and respect for life (Mollison 1988: 2). Patterns, art forms and music are also seen as sources of such philosophy. It is in such symbols and practices,and the knowledge which the embody, according to Mollison, that we encounter “the one-ness underlying science” (Mollison 1988: 99).

Practically, long-standing non-industrial production systems are also looked to for inspiration for sustainable resource management, such as ancient agricultural systems of the Philippine Ifugao, the Nile's flood cultures and Mexican chinampas (Mollison 1988: 500). Holmgren suggests that societies that “tended to reflect the bioregional climate and local availability of materials” could be used as models to inform locally appropriate sustainable building methods today (Holmgren 2002: 150). Another example is the irrigation systems of some non-industrial societies, which serve as inspiration for earthworks such as swales and keylines (Blais 2006: 1).

Holmgren explains the reasoning for permaculture's attention to indigenous knowledge and practices: it “is based on the evidence that these cultures have existed in a relative balance with their environment and survived for longer than any of our more recent experiments with civilisation … we need to consider a broader canvas of values and concepts than those delivered by recent cultural history” (Holmgren 2002: 7-8). Permaculture is said to romanticise non-Western or non-industrial society (Holmes 2014). Yet authors like Bell (1992: 2) argue that permaculture does not imply “a previous golden era to which we should all return, nor that we should reject, out of hand, modern technology. However, there are plenty of old ideas worth assimilating into our lives.”

It would appear then that in permaculture theory, a fairly clear distinction is made between preindustrial and Western societies, and suggests that we look into models and mythologies of the past for inspiration for contemporary sustainable design of human settlements and social organisation. The dimensions of indigenous knowledge our attention is drawn to are: those societies that display an ethic of earth care;

mythologies (embodied in pattern, song and symbol) that manifest a philosophy of universal connectedness between the human and non-human, animate and inanimate and recognise their intrinsic worth; techniques that are responsive to local conditions; and patterns that provide information about social structure and design.

In this vein, Pyhala (2013: 207) contends that permaculture not only draws on "traditional knowledge" but also "offers opportunities for the revitalisation of local traditional and indigenous culture, knowledge systems, and traditions, while simultaneously encouraging integration with modern science and technology" because it encourages user participation in the design process - "[i]t is not a method for designers and workers or other 'experts' to 'solve' the problems of a client group. Such experienced people can facilitate the process of community design, but only where invited" (Bell 1992: 102). Rather than seeking to impose permaculture notions on other people and the land, one is encouraged to work with what is already there – in the landscape and in terms of existing traditions, values and belief systems (outside of industrial capitalism) rather than seeking to transform them (Pyhala 2013: 207).

Permaculture discourse is informed by scientific theory, in particular ecology, and translates these theories into design and ethical directives. Indigenous knowledge is apparently used also to inform practice, and especially the philosophical stance the discourse holds.

Ethics and Principles in Permaculture

Permaculture goes beyond technical design of agroecological systems or human settlements. It includes a strong philosophical dimension (Holmes 2014: 4) that refigures human-ecological relations relative to a dualistic paradigm that sees humans as apart from nature. Ecological concepts such as entropy, thermodynamics and energy flow are translated in permaculture into a set of ethical directives and design principles. According to Holmgren (2002: xiv), they "can be derived from the study of both the natural world and pre-industrial societies, and … will be universally applicable to fast-track the post-industrial development of sustainable use of land and resources".

These ethics, principles and design aspects of permaculture discourse are considered fundamental to the practice. In spite of a redundancy noted in the permaculture literature that reproduces Mollison and Holmgren's ideas (Sass-Ferguson and Rafter 2014: 257), I focus on the works of Holmgren (2002) and Mollison (1988) to first elucidate these ethics and principles, and then consider the design strategies proposed therein.

According to Mollison (1988: 11), human relations with the natural world in Western society are governed by prohibitions that exist within already destructive and anthropocentric civilisations and belief systems. There is a void of taboo or myth to inform and regulate human-natural relationships. Their absence leads to destructive activities, such as inefficient and unproductive resource use that results in ecological degradation. Ethical - efficient and productive - resource use is central in permaculture. Not only is it ethical, but using resources only when absolutely necessary and conservatively allows for a realisation of "our interconnectedness with nature" and our dependence on natural systems for survival (1988: 3).

This conviction led the early developers of permaculture practice and discourse to research community ethics in "older religious and cooperative groups" where they sought out universal principles for human-ecological relations which they could apply themselves. Neither Mollison nor Holmgren indicate how these ethics or principles are derived from knowledge or myths from "pre-industrial" or non-Western societies, nor the older religious or cooperative groups they refer to.

Far easier to recognise is the language and philosophy of ecological writers that Mollison and Holmgren drew inspiration from - in particular, Christian biologist Charles Birch. Like Watts, Birch explored the notion of ecology and was party to developing the concept. Birch, together with theologist John B. Cobb developed a treatise which expounded their views on the ethical and spiritual implications of an ecological understanding of life processes and human's positioning in that, published in the book Liberation of Life first in 1981 and again in 1990. The work represents a critique of anthropocentric mechanistic views of life that allow life processes including the human and non-human to be objectified and subsequently exploited, and

imply a dualisation or separation between humans and nature. It is also a critique of models of "unlimited economic growth" (Birch and Cobb 1990: 8). For these authors, an ecological interpretation that emphasised interdependence, connectivity, the continuity between human and non-human, the intrinsic worth of all living and non-living entities and , implies an ethical stance that recognises the value of all life.

Certain ecological concepts and theory that Birch and Cobb discuss intensively feature significantly in Mollison's work - entropy, the second law of thermodynamics, seeing organisms as systems with inputs and outputs, functions and needs (Birch and Cobb 1990: 16); emphasising the "internal relatedness of living things to their environment" (Birch and Cobb 1990: 94) and the location of humans within ecosystems (Birch and Cobb 1990: 98). The extrapolation of these ecological principles into an "ethic of life" (Birch and Cobb 1990: 141) that implies certain kinds of ethical behaviour is similarly identifiable in Mollison's work. Birch and Cobb argue that while on the one hand energy has a tendency to dissipate, an opposing force exists in nature and that is the impulse towards life. Moreover, when entropy occurs there is a tendency in nature towards order and organisation. There are ethical implications of these laws of nature - the choice of actions that promote life rather than death, and order rather than chaos.

Mollison reduced these ecological principles to three ethics which have come to represent permaculture: "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"; and "Setting Limits to Population Growth and Consumption" (also referred to as "surplus share") - "by governing our own needs we can set resources aside to further the above principles" (Mollison 1988: 2). These ethics are to be considered when making design decisions and in "everyday endeavours" (Mollison 1988: 3) such as personal well-being and relationships (Rushing 2011) or business.

These ethics - based on ecological principles and apparently "traditional" or non-industrial ecological mores - are to inform resource use and sustainable human-ecological relationships. These ethics translate to the following sorts of land use directives: do not disturb remaining natural forests; rehabilitate "degraded and

damaged natural systems to stable states", establish plant systems to support human needs on the least amount of land possible and establish refuges for threatened or rare species. He points out that the third of these ethical prescriptions – relating to providing for human needs – is permaculture's main focal area (Mollison 1988: 7). Rather than being "immutable rules" these ethical guidelines are seen as "flexible principles and directives" (Mollison 1988: 11), and inform the practical dimensions of permaculture in land use and settlement design. The application of these theories is supposed to bring about systemic change and a different path of human development and socio-ecological relations than offered by capitalist industrial economies and politics.

Not only is the application of these ethics supposed to generate more sustainable human ecological relationships, but for Mollison, should also provide the basis for the formation of community. In his view, shared world view or values supersede territory as a basis for the imagination and formation of community, and he argues that without an "agreed upon common basis to their activities" neither community nor nationhood are possible. These ethics, he believed, should provide the basis for a the formation of a global nation that shares a "belief in the establishment of an harmonious world community" that includes the non-human (Mollison 1988: 507). Realising that human survival depends on the survival of natural systems and their interconnectedness, is a process "common to every group of people who evolve a general earthcare ethic" (Mollison 1988: 3). Mollison states, "[t]hose who agree on such ethics, philosophies and goals form a global nation" (1998: 3). The basic notion that humans and natural systems are connected and interdependent, in this view, is what informs any ethic of earth care, and a common basis for the formation of a global community.

While the ethics have remained constant in permaculture, the principles have changed shape in the way that they have been formulated and presented in the various definitive permaculture texts. The British Permaculture Association provides the principles from Mollison's Permaculture: A Designer's Manual (1988: 15) and Mollison and Slay's (1991) Introduction to Permaculture. The first text purveys the following principles: work with nature rather than against it; the problem is the solution; make the least change for the greatest possible effect; the yield of a system is theoretically unlimited; and, everything gardens. In the second, we find these

principles: relative location; each element performs many functions; each function is supported by many elements; efficient energy planning: zone, nutrients, resources; small-scale intensive solutions; accelerating succession and evolution; diversity; edge effects; attitudinal principles: everything works both ways, and permaculture is information and imagination-intensive.

The twelve principles that Holmgren (2002) synthesised are: observe and interact, catch and store energy, obtain a yield, apply self-regulation and accept feedback, use and value renewable resources, produce no waste, design from pattern to detail, integrate rather than segregate, use small and slow solutions, use and value diversity, use edges and value the margin, and creatively use and respond to change.

The principles and ethical injunctions for behaviour have been extrapolated from ecological principles, and bear close resemblance to the ideas developed by Mollison's intellectual antecedents, Birch and Watts. The founders of permaculture theory claim that knowledge from non-industrialised or non-Western society was used to inform the ethics, it is not clear how. Romantic notions about non-industrial societies' being in balance with nature or representing long-standing cultural traditions and examples of sustainable societies are more easily recognisable. Agricultural practices and technologies associated with such societies are seen as worth exploring in the search for sustainable options for social reproduction and averting environmental catastrophe. Like environmental anthropologists, permaculture practitioners looked to non-Western or "traditional" societies for models for sustainable behaviour, yet with its implied and overt reference to non-industrial societies as exemplars of harmony and balance, permaculture theory, remains bound to what Milton refers to as the "myth of primitive ecological wisdom". For anthropologists, how such myths are utilised - to which ends and purposes and under which circumstances - is important in terms of the goal of identifying a range of sustainable models for human behaviour in the face of the ecological and social threats posed by exploitative capitalist economics. In the case of permaculture, its theoretical aim is similarly to avert environmental catastrophe in the face of destructive capitalist economics, and thereby redeem humanity.

While permaculture theory has strong ideological content, its focus is on practical

strategies for achieving its broader goals for systemic change. The ethics and principles are to be applied practically through environmentally considered design that makes use of ecological theory and traditional agricultural techniques.

Permaculture Design

Design is the key strategy employed in permaculture practice, informed by the ethics and principles described above. Permaculture employs ecological and systems thinking approaches to analyse site conditions and inform land-use practices – especially food production and settlement – based on particular land-use goals. Permaculture design theory emphasises site specificity, including microclimate. The interaction of components in an ecological system at a range of scales, and facilitating their multifunctionality is a design priority (Sass-Ferguson and Rafter 2014: 262).

Design can be applied in "landscape, social and conceptual systems" (Mollison 1988: 9) with the aim of reducing resource consumption through resource use efficiency. The ultimate path to sustainable earth care for Mollison (1988: 9) is to "reduce the area of agricultural environment needed by households and the settlements of people, and to release much of the landscape for the sole use of wildlife and for the re-occupation by endemic flora".

Permaculture discourse does not, in theory, promote particular techniques or technologies, but rather provides a conceptual framework for analysing appropriate methods (Sass-Ferguson and Rafter 2014: 264) for providing for human needs in a way that is also beneficial, or at least not harmful, to the earth and ourselves. This is in recognition of current practices considered unsustainable, such as industrial agriculture and consumption and production patterns (including pollution) as well as climate change, global warming and expected environmental catastrophe (Brookman and Brookman 2011: 141).

The purpose of permaculture design, then, becomes to understand what one's needs are, the local context (climatic, topographical, ecological) in which they are to be sought, how physical and less visible components or elements interact with each other

in terms of generating "yield" and providing for human needs within an ethic of earth care. Permaculture thus becomes a "system of assembling conceptual material, and strategic components in a pattern which functions to benefit life in all its forms" (Mollison 1988: 36). Components in this context refer to techniques, strategies, materials and assemblies included in a site or "system" (Mollison 1988: 36).

Four important design concepts in the permaculture paradigm are "sectors", "zones", "yield" and topography (slope and aspect). These conceptual tools aid in the understanding of local climatic and physiological patterns that bring to bear upon land-use goals. Zone and sector analysis are considered "a primary energy-conserving placement pattern for the whole site" (Mollison 1988: 49). Two energy sources are deemed most important – that which is available on-site and that which enters the site.

Sector analysis considers the energy entering a site (e.g. wind, water, sunlight, fire and people), which are mapped graphically into a "sector map". Components or elements on a site interact with external forces, making them available as potential resources for human use and for system sustenance, or as forces that need to be designed around and protected from (Mollison 1988: 16).

The zone concept is used to inform the relative location of components on site according to use, access and available time and to plan around on-site energies (e.g. people, machines, wastes and fuels). The term zone refers to zones of use – determined by frequency of use and interaction, with the most frequently used components located closer to the centre of activity (Mollison 1988: 49). In theory these are concentric zones (Zone 0 often the house, Zone 1 kitchen garden production, through to Zone 5 being wilderness), but when applied in design will mould to the natural features of the land e.g. "access … slopes, soils, local wind patterns or boundaries" (Mollison 1988: 49). For Mollison, these zones can be thought of as "a gradation between an ecosystem (the home garden) managed primarily for people, and the wilderness, where all things have their right to exist, and we are only supplicants" (Mollison 1988: 57).

Holmgren (2002: 139) explains that "[a]lthough the zones are conceived of as concentric, this is never so in practice. Slope, soil, aspect and infrastructure all cause

particular zones to shrink or expand … It is useful to think of a zone as characterised by a set of plants and animals, management strategies and structures." These design tools, Holmgren warns, should not become a blueprint for design (2002: 139). Similarly, Mollison indicates that there may be a generalisable sector analysis for a bioregion, but a more specific analysis would be required at a site.

Elements in the landscape are capitalised on not only in terms of their material product, but also the functions they can offer. Slope, aspect, elevation and orientation are all design considerations. Taking slope into consideration allows the designer to capitalise on gravity, for example, in water supply systems, leading to greater energy efficiency according to Holmgren (2002: 144). Aspect refers to the direction that a slope is oriented – sun-facing or not. Accordingly, one uses appropriate orientation of buildings to maximise or buffer exposure to the elements (Mollison 1988: 57). Bringing these conceptual tools together, Mollison explains that: "In summary, if the elements of the design are carefully zoned, the sectors well-analysed, the sun angle and slope benefits maximised for use, and the constructed environment oriented to function, then a better design results" (1988: 57), and in theory, better yields too.

The zones and sectors, along with existing elements on the land, can be documented and mapped in order to help make decisions about what to add or change in order to create a self-regulating system integrated with local natural ecologies and features. Observation is a key dimension of this work. Besides observing sectors, local topography and climate, Mollison calls attention to the study of processes, such as water movement through a site, or the location of different types of vegetation, and to think about how these can be understood and mimicked - "nature" becomes educator (Mollison 1988: 46).

Permaculture design theory also emphasises pattern. Mollison directs attention to pattern use in non-industrial societies settlement layout compared to "centralised and disempowered societies [that] will reveal a strictly rectilinear network of streets, farms and property boundaries" versus "Hawaiian villagers, who took natural ridge lines as their boundaries [or] Zulus and American Indians who adopt the circular and zonal modes in their plains settlements" (Mollison 1988: 95-6). Mollison argues that "such models can be studied by future (bioregional) societies as sane and caring

people become the majority in their region" (Mollison 1988: 96).

While drawing inspiration from pattern use in non-industrial societies, observation of the "underlying patterns of natural phenomena" to inform design is also encouraged (Mollison 1988: 70). This includes patterns in "flows, growth forms, and timing and information" (Mollison 1988: 70), such as the structure of natural systems e.g. multilayered forest canopies. According to Mollison, "it is this patterning that permits our elements to flow and function in beneficial relationships. The pattern is the design, and design is the subject of permaculture" (1988: 70).

Permaculture design calls attention to the purposes of land use, local biogeographical context, energy efficiency through harnessing or buffering of natural elements, and considered placement of components in the landscape for mutual benefit, based on thorough observation of local context and the patterns in natural systems. This approach to design is to be cross-checked with the principles and ethics – earth care, diversity, integration, maximisation of yield and so forth.

Permaculture theory utilises a functionalist perspective of human-ecological relationships informed by an ethic of earthcare and the intrinsic value of all things. This ethical ecological approach in permaculture design for sustainable land use seems to be characterised not so much by particular material features but rather by its ecologically-oriented approach to seeing to basic human needs in a self-regulating manner that mimics patterns found in natural systems.

Politics in Permaculture Theory

Holmes (2014: 13) argues that the practical and ecological dimensions of permaculture allow us to consider it as "simply another sustainable movement: it represents a pragmatic response to what it sees as the future economic collapse of modern capitalism." However, its functionalist socio-ecological perspective "extends beyond ecological criticism into the realm of cultural criticism". Permaculture, in locating human society, settlement and production within a broader ecological web, and in guiding us to mimic natural, self-regulating systems, calls for "an abandonment

of the capitalist economy and the creation of a decentralised federation of local communities" (Holmes 2014: 16) bound by a shared ethic of earth care.

Mollison tells us on the first page (1988: 1) of Permaculture: A Designer's Manual, "the courage we need is to refuse authority and to accept only personally responsible decisions. Like war, growth at any cost is an outmoded and discredited concept … It is therefore our only possible decision to withhold all support for destructive systems, and cease to invest in our own annihilation" (1988: 1).

The cultural critique and political dimensions of permaculture come to the fore in Mollison's chapter on "Strategies for an Alternative Nation" (1988). Therein he argues that there are social and political impediments to sustainable practices, and that any of the land management strategies employed to realise sustainable earth care are impotent if these are not tackled (1988: 506). He suggests that people can mobilise in electorates or environmental causes, e.g. to end pollution, or to form a political party or bioregional group (Mollison 1988: 510). His vision of bioregional political organisation is one where "every region needs to act as a curator and refuge for some critical life elements of allied regions, so that the absolute loss of species is unlikely short of global catastrophe" (Mollison 1988: 514). Bioregional organisation of land users could address sustainability and resource management in larger scale land use than just the homestead level, and this implies a level of self-management and decentralisation.

Self-regulation observed in natural systems is to be reproduced at the social and political level: "we should cease to look to power structures, hierarchical systems, or governments to help us, and devise ways to help ourselves" (Mollison 1988: 506). What Mollison argues for is the formation of a "global, interdependent, and cooperative body of people involved in ethical land and resource use … to a global network of small financing systems" (1988: 506) and a "new concept of 'nation'" based on a common ethic of earth care, reparation, and conservation, peace and human rights, and the investment of surplus energy in all its forms to those ends (Mollison 1988: 508).

Mollison argues that it is possible to be self-reliant and create cooperative

communities that channel surplus resources for the purpose of an ethic of earth care without first addressing political change - “people can act independently of political theory … the place to start is first with the individual (oneself): and second one's region or neighbourhood” (1988: 809).

The primary tool for political change in this view is the withdrawal from hierarchical political and economic systems. It is assumed that self-reliance and ecological resource production can be achieved without change at the political level, yet at the same time certain limitations posed by politics – such as access to land and resources and their corporate monopolisation – are also recognised. The argument is that the individual does not have to wait for politics or economics to change in order to bring about more harmonious and less destructive social and ecological relations. By using resources more conservatively through ecologically considerate design and by communing around an ethic of earthcare in a self-sufficient manner, a more ecologically and socially healthy global society can be engendered.

Permaculture in Contemporary Environmentalism as a Cultural Perspective

Environmental anthropology and social movements theory take an interest in the discourse, knowledge and practices in identified social movement. Their movement trajectories and their aims, claims and means all come under scrutiny. With an understanding of environmentalism as cultural perspective, of particular interest to environmental anthropologists are models for sustainable action proposed in environmental social movements, their use of different kinds of knowledge in the constitution of their discourses, and their socio-historical context. Whiteness studies introduce questions into these analyses of environmentalist movements around how specific cultural perspectives might be foregrounded in their discourse and practice, and in what ways these might function to exclude or erase other perspectives - with reference in particular to white skinned people. Whiteness studies introduces questions around the ways in which particular environmentalist perspectives may be privileged and exclusive.

The account of permaculture’s history above provides a shallow perspective on

permaculture's sociohistorical emergence and its primary discourses, but still provides insight into the kinds of universals it suggests, the knowledges and mythologies that constitute its discourse, and the practices implied therein. This sociohistorical contextualisation also provides a way to think about the discourse as a cultural perspective, identify the politics that it implies and to understand the discourse in relation to other emergent environmentalist perspectives. The isolation of the primary features discourse, the elicitation of a particular cultural perspective and characterisation of permaculture as a social movement in relation to other sorts of environmentalist perspectives allows for those gaps, fissures, contradictions and overlaps that environmental anthropologists seek out to emerge. It also provides a way to look at the issues pertinent to the whiteness literature, specifically around the foregrounding of cultural perspectives that correspond with race. Moreover, scrutiny of the political implications of permaculture theory provide insight into the permaculture discourse's positioning in terms of race and privilege.

Permaculture is framed principally as a reaction to the social and ecological ravages of global capitalism. It proposes an alternative to the damaging dimensions of that political-economic system which it sees as the cause environmental destruction that will lead to the demise of humanity. Its primary focus is ecological food production and household reproduction.

Environmental catastrophe can be avoided, and humanity's survival ensured, if humans worldwide follow the laws of nature revealed in ecological science and the ecological wisdom of non-industrialised and non-Western societies. This would entail reducing the need for the nation state through decentralised management of resources through individual and communal self-reliance and self-regulation, bioregional coordination, and the establishment of a global nationhood based on a shared ethic of earth care which implies conservative resource use. Through the creation of permanent agroecologically-based cultures, a stable, harmonious and peaceful global society can be forged to replace a global capitalist world order. The means to achieve this kind of self-sufficient and autonomous society is through systems-based design informed by ecological theory and traditional ecological wisdom and the application of ethics and principles derived from those same sources.

Permaculture design strategies are informed by a systems thinking approach to environmental management that takes into consideration the physical features and elements of a given environment (inputs), relative location of systems within a system, and the yield of a system (outputs). Concepts emphasised in permaculture thinking are holism, harmony, stability, permanence, integration, cooperation, resilience, complexity, diversity, energy exchange, self-reliance, self-regulation and yield. The design principles are intended for use not only in physical systems, but in social, political and economic systems. Conservation of natural systems is to be achieved through considered ecological design of human affairs by encouraging diversity, complexity; cooperative and functional relationships between living and non-living entities; and by rationalising land and energy consumption.

While locating the world's social and environmental ills in the current political and economic system, it offers a model of political change that is ultimately to be achieved through individual self-reliance and bioregional organisation, and the creation of alternative modes of production, economic and social organisation. Permaculture discourse similarly holds that structural change can be brought about through individual enlightenment - in this case, in ecological wisdom. Mollison and Holmgren's imagined that with sufficient knowledge about ecosystems and local climate, an individual permaculture designer could see to their own needs, physical and spiritual, and design stable and harmonious productive ecosystems within which people were located, and thereby bring about social change and ultimately, stable ecological and social systems. Moreover, they held the conviction that should people commune around a common ethic of earth care - a belief in the intrinsic value of all things and the interconnectedness between people and nature - it would be possible to form a global community of earth carers who could replace the role of the nation state by seeing to their own needs and managing their own resources.

This history shows that permaculture concept was developed by two "white" men in Australia, a former British colony, who saw in capitalist and industrial economies the threat of environmental crisis. Their interests lay in ecology, agriculture, land use and the knowledge and philosophies of non-industrialised societies, and their points of view grew within an academic university context out of concepts developed in Western science, namely ecology.

The concept emerged amidst the counter-cultural movement of the sixties and seventies, was influenced by the discourse of the time that rejected authoritarian, militaristic and damaging aspects of Western society that included and ecological destruction associated with the hegemony of global capitalism.

Permaculture discourse spread throughout the world through the work of individuals initially (Mollison in particular, in the beginning), via public talks, face to face through the permaculture design courses (PDCs) with a set curriculum based on Mollison and Holmgren's ideas, through conferences, publications, and more recently digital channels but without a central organising body. Permaculture is performed worldwide, in projects and through education, and diffused through an ostensibly de-institutionalised, non-centralised and autonomous network of practitioners.

Existing analyses of permaculture describe it as a form of agroecology (Sass-Ferguson and Rafter 2014) and alternative to industrial agriculture.It is interpreted as a utopian critique of capitalism (Lockyear and Veteto 2013: 24) - a form of contemporary romanticism and a return to ideals and values "drawn from the past" born out of a sense of alienation under capitalism (2014: 6).

As an alternative to neoliberal approaches to sustainability (Wilson 2007; Burke 2011; Bisson 2013), it seen as route - together with online digital communities and indigenous culture movements - to reclaiming the commons in the context of profit-oriented and privatised economies, and to negating the need for the nation state (Blais 2006: 2. 6-8).

Benefits associated with permaculture practice have been reported amongst diabetics (Lehner 2012), in children's playgrounds (Bulut 2008) in therapy (Corazon et al. 2012); organizational development (Mannen et al. 2012), food security (Coleman 2004), education (Mukute 2009), low-impact development (Pickerill 2013), and landscape design (Prinsloo 2010).

Jensen and Postma (2008: 6) argue that it is difficult to find significant critiques on permaculture. Its theory and practice are the two main areas of critique which stems

both from within the movement, and from without. The founders of the concept admitted some limitations to their thinking, particularly around the scale of applicability of their design framework. Mollison recognised that over 50ha or more intensive occupation of the land, such as at village scale, design becomes more complex (1988: 68), and Holmgren saw limitations in permaculture design beyond the individual site, arguing that in these cases “other approaches that start with the whole landscape are necessary” (2002: 144). Permaculture design, in theory, is seemingly mostly intended for small-holdings or residences.

The label itself is seen as an impediment where it has led to the movement being perceived as a cult unwilling to be questioned or criticised, the formation of 'camps' within the movement subscribing to the philosophy of either Holmgren or Mollison (Dawborn and Smith 2011: xiii). Permaculture is seen at times as oversimplifying (Holmgren 2011: 28), and its claims overreaching, a “sweeping extrapolation of ecological principles” Sass-Ferguson and Rafter 2014: 267), its definitions vague yet its theories too complicated for easy application Harper (2013). Its claims, like productivity and ecological functioning. are not adequately backed up by data, and its ecological practices, effects and consequences poorly understood (Jungck 1985: 73: Noga 2012: 21; Sass-Ferguson and Rafter 2014: 268; White 2011: 34). The assumptions of the discourse and its design framework, coupled with the discourse’s production being centred in developed nations, suggests that it might be ethnocentrically skewed towards a Western perspective (Jansen 2011: 303) and experience and thereby constitutes a form of coloniality of knowledge (Sass-Ferguson and Rafter 2014: 265). Moreover, its focus on the individual and dismissiveness of political change suggests a depoliticised stance and a trivialisation of the “complexity of socioecological processes and struggles” (Sass-Ferguson and Rafter 2014: 269).

These critiques and analyses help to think about permaculture as an environmental social movement, and provide some indication for areas of inquiry and further analysis. Of particular relevance to the findings presented in this thesis are the characterisation of permaculture as a utopian anti-capitalist agroecological movement, which, together with a discussion of its historical context and emergence sheds further light on the nature of the movement. Those critiques which highlight the lack of analysis of permaculture knowledge and practice, the ways in which ecological

principles are extrapolated into practical and philosophical directives, indications of ethnocentricity and the depoliticisation of the notion of structural transformation through a focus in the individual provide resonate with and provide direction for the analysis of the findings presented above.

Viewing permaculture discourse and practice in light of analyses of other similar and connected movements provides some possible avenues for its interpretation: not only does it share features with other environmentalist discourses and social movements, such as an anti-capitalist critique and ecological-orientation. They also help to understand its ideological an political features in socio-historical context, and reveal its quasi-religious and nationalist overtones.

Turner's (2006) discussion about the back-to-the-land movement in 1960s USA is enlightening. Turner (2006) demonstrates that the New Communalists or back-to-the-landers who formed part of the counter-culture who "intended to build self-sufficient retreats in which they might rediscover what they imagined to be pre-industrial forms of intimacy and egalitarian rule" (Turner 2006: 38) considered consciousness as a source of social change. Seeing the self as catalyst for social change allowed these people to consider their individual lifestyle choices as political acts: "consumption and lifestyle technologies—including information technologies—would have to take on a newly political valence … technological bureaucracy threatened a drab, psychologically distressing adulthood at a minimum, and beyond that, perhaps even the extinction of the human race …". He argues that the networks and philosophies that emerged from amongst mostly white, middle-class counter-culturalists were not merely dissenting the cold war military order but were also a product of that order, and drew upon ideas and metaphors developed within it to motivate and reinforce their particular philosophical and political points of view.

Turner's analysis might help to explain how the notion that change emanating from the individual at the level of consciousness and lifestyle choice might be considered a political act in permaculture. It also sheds light on the ways that self-critical movements such as this - "Westerners" criticising their own culture and political systems and turning to "non-Western" societies for alternatives - are yet a product of and framed by the same context. It moreover provides some indication as to why

permaculture's fundamental notion that structural change can come about through a consciousness shift and ecologically-oriented lifestyle choices might be attractive to white middle-class frustration with being party to an increasingly controlling and exploitative economic and political system of global capitalism.

The attractiveness of the notion that a change of consciousness, within reach of the individual, can bring about social and ecological transformation connects to another feature of the permaculture discourse: its theological disposition. If a consciousness shift is what is required, permaculture seems to provide the means to achieve it. Analyses of the deep ecology movement reveal the religious and spiritual attributes of this discourse.

The points of overlap between Turner's findings on the back-to-the-land movement and permaculture ideology return to some of the points raised in the above-mentioned critiques. One is permaculture's depoliticised stance, and the other is its emergence as a particular cultural perspective born of a Western, even colonial experience.

Deep ecology and radical environmentalism both provide critiques of global capitalism, questioning anthropocentric environmentalism and the commodification of nature, and look to nature for inspiration and authority (Taylor 2001: 179). Garreau (2010: 67) indicates that contemporary environmentalism, like religion, can be defined as "a belief that the world has an unseen order, coupled with the desire to live in harmony with that order", offers the "value of a community with shared beliefs and practices", and includes notions of the sacred and profane; "awe, mystery and guilt"; rituals, sacred objects, and moral codes; and "a world view that includes a notion of where the individual fits; and a cohesive social group of the likeminded".

If we take Garreau's religious characterisation of environmentalism as indicative, permaculture seems to contain elements of religiosity or spirituality. Nature provides the basis for a moral or ethical order and set of behavioural codes. Notions of right action themselves were drawn from apparently non-industrialised societies. With its moral prescriptions of say, "wrong" or "right" energy use and the ethical use of resources, and its reification of "laws" of nature and reference to "traditional mythology" and beliefs and the positioning of the individual designer within an

ecological web and bound by a set of ecologically-inspired ethics of principles, establishment of a language of design and ethics, and the encouragement of the formation of communities of practice around that, and offering a means of redemption from expected catastrophe, permaculture theory and philosophy seems to offer these features of religion or spirituality. Add to that certain ritual occasions, like the PDC perhaps, preachers like Mollison, and a tome like his manual, and the parallels between permaculture and religion become even more aligned. Given that Birch, who developed a sort of gospel of ecology and was amongst Mollison's ecological muses, it is not surprising that the discourse he spread into the world had religious features. It may be partly for this reason that the theory has not developed much since the 1980s or that the movement is perceived as a cult, unable to be questioned and known to eschew academia - it could be be taken as a set of beliefs and dictums. The promotion of a predetermined set of beliefs or moral codes that is supposed to form the basis of the global nation of earth-carers that Mollison imagines that gives permaculture a quasi-religious character also suggests a number of consistencies with nationalist ideological thought. Eriksen (2010: 120) describes the concept of a nation as an ideological construction that seeks to "forge a link between (self-defined) cultural group and state … [and] create an abstract community of a different order" to those which came before. Eriksen describes how nationalism can hark to imagined traditions of the past that "may glorify and recodify an ostensibly ancient tradition shared by the ancestors of the members of the nation, but it does not hereby recreate that tradition, it reifies it" (Eriksen 2010: 122). Certainly, there seem parallels between the way permaculture philosophy seems to draw on "traditional" tribal or indigenous mythologies and knowledge, especially those perceived to have a connection with "nature" as a means to generate a sense of global community of earth-care. But a second shared feature between nationalist ideology and permaculture seems to emerge. Eriksen (2010: 126) argues that nationalism offers "security and perceived stability at a time when lifeworlds are fragmented and people are being uprooted. An important aim of nationalist ideology is thus to recreate a sentiment of wholeness and continuity with the past; to transcend alienation and rupture between individual and society that modernity has brought about". According to Mollison, that is what permaculture theory and design is aimed at: creating a stable social order, a global nation of earth carers and a million villages to replace the nation state.

Environmental anthropologists suggest that it is worth comparing various environmental discourses in order to seek out their points of overlap and difference, and potentially seek out common courses of action. Such comparison also allows some of the contradictions or gaps within any particular discourse to become clearer, and new ways of looking at environmental problems and their solutions might emerge in the process.

I return briefly to an overview of the principle global environmentalist discourses identified by environmental anthropologists, and those more prominent social movements in South Africa which foreground environmental concerns which I introduced in previous chapters.

Social movements theorists and anthropologists that focus on environmental social movements take an interest in anti-capitalists expressions, and argue that many emergent social movements today have an ideological stance that challenges global capitalism. Such social movements and their environmental discourses draw on particular kinds of knowledge to back up their arguments against global capitalism, and to inform their own environmentalist priorities. Similarly, environmentalist discourses associated more closely with the aims of capitalism draw on particular kinds of knowledge to frame their environmental solutions.

Analysts have referred to a global capitalist environmentalist discourse variously as "Global Nature", a "globalocentric" or "global biodiversity conservation" perspective. Concerns within this broad discourse about the environment are expressed in terms of threats to human survival associated with biodiversity loss. The conservation of species, natural complexity and biodiversity are foregrounded through "green agenda" perspectives, as are the conservation and sustainable use of natural resources at the local, national and international scale through a notion of sustainable development. Biodiversity is to be managed through scientific research, conservation, biodiversity planning, management of biodiversity resources through intellectual property rights and the application of Western conservation science. Moreover, development is seen as the means to address environmental problems, based on the assumption that the application of Western knowledge, economic and political instruments will lead to better conservation of biodiversity and more conservative use of resources. A

capitalist economic model promotes conservation through economic development and assumes that the increasing capture of resources in private hands will lead to the mitigation and improvement of human-environmental relations for humanity on earth. It is a global capitalist anthropocentric fantasy of an homogeneously managed human and biological population controlled by a small proportion of private owners - of genetic resources, protected areas and even knowledge. This kind of capitalist globalist perspective on conservation does not pose new solutions to environmental problems, and remains within the same political and economic framework of offering economic solutions to social and environmental problems. Environmental issues are accommodated into the existing political, economic and social structures of industrial capitalism.

Radical environmentalist, ecocentrist and antiglobalist environmental perspectives all challenge the structures and solutions offered by global industrial capitalism, and the way that this way of thinking frames human-environmental relationships. They all call for a change in politics and economics in order for environmental and social ills to be addressed, and a change in the way human-ecological relations are understood - from human solipsism to ecocentrism, and seeing humans as amongst ecological systems rather than outside of them. Ecocentric perspective,like deep ecology, take ecological systems as of prime importance, rather than humans, and value the intrinsic worth of all living and non-living entities which together constitute life on earth. The anti-globalist perspective promotes locally-driven resource management and resists international regulation of people and natural resources in their own locales. It is a perspective that advocates self-determination and self-regulation, and the valuing of local knowledge and experience.

South Africa has historically been dominated by a conservative green environmentalist agenda that has largely been state-driven. The discourses of biodiversity and sustainable development are both evident in state policy. The most prolific environmentalist discourse here has until recently been one concerned with conservation, particularly in the form of nature reserves and concerns with species and habitat loss as a result of industrialisation and urbanisation. This perspective has been associated historically with colonial and apartheid environmental policy and management, and very often interpreted as a “white” concern.

Environmentalism amongst people of colour - categorised as “black”, “coloured” or “Indian” under apartheid and post-apartheid law - has only relatively recently been recognised and able to be openly expressed following the end of the racist regime. Amongst the more prolific social movements that have emerged in post-apartheid South Africa with an ecological interest are the Environmental Justice Movement (EJM) and the Solidarity Economy. Neither of these ideological movements are native to South Africa, and spread through processes of globalisation. Yet both display anti-capitalist sentiment and look to issues experienced by people of colour and those who are most negatively affected by capitalist economics in South Africa.

The EJM focus is on the differential experience of environmental problems for people of colour, and basic needs such as access to clean water, sanitation and waste removal along with exposure to pollution are paramount - brown agenda concerns, in other words. Race, poverty and race and class-skewed exposure to environmental problems especially in the urban context are paramount in this discourse, which advocates a change in the political and economic system - market-oriented or capitalist development - for their amelioration. While valorising life in all its forms, the discourse challenges notions of sustainable development and conservation through the commodification of nature.

The Solidarity Economy movement discourse also rejects aspects of capitalist economic relations which drive environmental management and human-ecological relations. It seeks to create an alternative to that. It is described as an ecocentric utopian discourse that seeks to create a community-based, locally-oriented and inclusive economy through cooperation, collective ownership and shift production and consumption patterns and their ownership from being top-down to bottom-up.

While the permaculture discourse is framed as a locally-oriented form of resistance and alternative to global industrial capitalism, upon comparison it has a number of common features with its general environmentalist discourse, as well as differences. Permaculture sees a re-orientation of human’s place in ecology as the underlying solution to environmental problems caused by industrial economies. Like sustainable development, it emphasises conservative natural resource use and biodiversity

conservation. Instead of top-down and state and corporate-led economic development and environmental resource management, permaculture discourse favours the establishment of local economies based on local ecologies and self-sufficiency and self-regulation with regard to natural resource use. Like global biodiversity discourse, permaculture draws on ecological theories developed under Western science that is also derived from non-Western societies, but whereas the former perspective favours a route of privatisation and commodification to ensure biodiversity conservation led by global elites (politicians and business owners), permaculture proposes that this should occur through the development of already degraded lands and individuals and communities taking responsibility for their own resource use and food production, thereby creating habitats for other species within human production systems and also freeing up land for other species to inhabit rather than allowing for sprawling human impacts over the landscape. Moreover, permaculture makes overt claims to valuing indigenous knowledge. For both perspectives, right environmental (and human) disaster can be seen to by meeting human needs, but the routes are quite different. For the globalist perspective, the kind of development envisioned is through top-down economic and political instruments, for proponents of permaculture it is the development of the household and the meeting of basic human needs through ecologically considerate design.

While permaculture and a global capitalist-oriented environmental discourse share the kinds of knowledge they submit to, and aim to conserve natural resources and biodiversity and ensure the perpetuation of humanity, their means and aims also differ. While the latter seeks out privatisation and commodification of resources, their top-down control determined at a transnational scale and the application of well-established profit-oriented economic policies, the former seeks out bottom-up bioregional community management and ecological change driven by the people rather than the state, and to bring about economic change through a shift in environmental relationships rather than the other way around.

Permaculture, EJM and the Solidarity Economy - philosophies all imported into South Africa - seem to have much in common. They share a rejection of capitalist profit-oriented and commodifying, objectifying ideology and a desire to create an alternative to that through the creation of local economies that attend to local needs.

All three also share a concern with meeting basic human needs, such as shelter, sanitation and access to food, as well as a valuing of life beyond the human. Of the three, permaculture is the only one which appears to have a discourse informed by ecological theory. Yet, as concerned as permaculture appears to be with the unfairness of the system of global capitalism, it does not explicitly deal with race - certainly a feature of global capitalism.

Theorists of environmentalism advise that we look to social movements for alternatives to capitalism and its associated social and ecological exploitation and resultant damage. To understand these social movements - like permaculture - we are advised to look at movement origins, history and development; discourse, knowledge and practices; and to understand the alternatives proposed and the truths these are based on - their blind spots and points of common interest.

The historical account provided shows that permaculture was developed by white people in a post-colonial context amidst the counter-culture associated with the rejection of industrial and capitalist militarism, economic control and environmental and social exploitation.

While based on apparently objective science and presenting itself as universally applicable by laying down a range of prescriptions for behaviour drawn from invisible "laws of nature", generated themselves in objective science, permaculture bears features of a faith-based spirituality, with its own set of moral prescriptions and injunctions, prophets and acolytes. The wisdom handed down imagines that ecological conservation, human well-being, and social, political and economic stability can be effected through the creation and support of stable ecosystems. It is the individual's imperative to make lifestyle choices and to design their settlements and food production systems in accordance with the laws of nature – using the information and technology made available by modern economics and society - and to see themselves within rather than outside of ecosystems. The permaculture designer will commune with others based on a shared world view constituted by a code of ethics, moral prescriptions such as "right" energy use, and duties and responsibilities towards nature – informed by the "laws of nature" and romantic notions of indigenous or tribal society. Social order and stability are sought, but this order is to be achieved

though the individual following the logic and laws of nature to design their homes and gardens, rather than the laws and logics of the economy or government. Permaculture has in common some features with global capitalist environmental discourse e.g. a shared submission to scientific ecological theory, a desire for a new kind of future, and a shared concern with biodiversity and resource conservation in the face of industrialisation. But these shared notions and knowledges are put to different uses - in the first case, to reinstitute and reinforce profit-based economies based on privatisation and thereby ameliorate environmental problems; while in the second case to create an alternative to that system and avert the environmental and human disaster that unfettered economic development and intensified commodification of all life imply. This is to be realised through a faith in ecological processes and nature, a notion of human-ecological interconnectedness and the formation of a global community made up of individuals working together to provide for their own needs and manage their own natural resources conservatively and collectively. As such, permaculture could be characterised as an ecocentric utopian environmental discourse that shares features with the anti-globalist, anti-capitalist, ecocentric and radical environmentalist discourses that seek alternatives to global capitalism like deep ecology.

In the South African context it shares a concern with emergent eco-social movements, such as attention to meeting basic needs, addressing inequality rooted in profit-based economies and providing an alternative to that kind of economy. One of the fundamental differences though is that the permaculture discourse seems to obscure and occlude race as a dimension of global capitalism by promoting a universal notion of earth care, and by locating social change primarily with the individual depoliticises environmental, social and economic issues. Moreover, as a progeny of Western ecological science and developed by people of European descent in a former colony - “whites” - it could be taken as the spawn of “white” cultural interests in terms of a whiteness studies perspective even though it has much in common with emancipatory and anti-capitalist movements which should be definition be ant-racist.

Given this array of cultural, ideological, social historical and philosophical dimensions to permaculture theory and discourse, we might ask how does a “permaculture person” imagine themselves, what kind of knowledge do they generate

and draw upon to give structure to their actions in the world, and what sort of world is it that they envision? Baker (2013: 287) asks: “what happens when people to decide to experiment with organisations and communities that reject [the] unsustainable relations and practices” of a “culture of capitalism [that] is untenable at several basic levels? What happens when a group of people try to create a sustainable within an unsustainable context?” and “what are the tensions and contradictions engendered?” (2013: 286).

What does happen when people try to enact a unifying theory of human-ecological relationships? What do people do when they say they are doing permaculture? How do those practices articulate with the social reality? In terms of questions from whiteness studies and the above findings, one might ask of the permaculture movement in South Africa in what ways this “white” discourse might perpetuate the valuing of the perspectives and values of “white” people, as well as privilege and power. These are questions that seem only to have been considered in the academic literature to a very limited extent. I hope to complement the above discussions about the principle theoretical and philosophical concerns in permaculture, and the means of achieving those which are proposed, with fieldwork findings that reflect not only the world view of those who practice permaculture that I engaged with in South Africa, but also the practices they engaged in when they said they were doing permaculture, both in the physical and social realms. In the following chapters, I look at the manifestations of permaculture in the South African context and analyse these in terms of the questions raised in environmental anthropology of social movements and whiteness studies.

Chapter 6: Spawn of a Movement: The history and development of permaculture in South Africa

The concept developed by Bill Mollison and David Holmgren in the 1970s brought together Western ecological theory, agroecological practices and notions of indigenous knowledge and wisdom into a single philosophy - permaculture. This theory and doctrine was supposed to provide people around the globe, with a shared ethic of earth care, with direction and the tools to avert environmental catastrophe that was bound to strike with the unabated and unhinged operation of the socially and ecologically exploitative and profit-oriented political-economic system of global capitalism.

In this chapter, I provide a short and incomplete history of the development permaculture in South Africa and the sociopolitical circumstances within which it was adopted here, based on interviews with individuals involved in permaculture since its inception in the country. I highlight the human channels through which permaculture arrived here, identify locations where it was adopted and consider the kinds of initiatives established under the banner of permaculture.

Contemporary permutations of permaculture practice and its social constitution, understood through specific research sites in the Western Cape - the Arid Zone Permaculture Initiative and Permaculture Education in Schools - are presented. I look at who was practising permaculture and where it was being practised; the sorts of social communion that happened around the notion and the ways in which individuals in different circumstances have understood and experienced it.

This kind of information allows one trace a lineage from present to past, and to track change over time, and to gain a sense of the nature of this movement: its social constitution, under what circumstances it has been adopted, how it has travelled, and how it has shifted. It provides the basis to begin asking questions important for environmental anthropologists and analysts of social movements.

It also allows one to begin to address questions raised in whiteness studies around the adoption and propagation of this ecological social movement, construed in whiteness studies as a "white" or occidental cultural perspective, in southern African context.

Propagating a Movement: The arrival and development of permaculture in South Africa

Permaculture entered South Africa in the early 1990s via Zimbabwe and Australia. The first permaculture training centre established in southern Africa was at the Fambidzanai, an agricultural co-operative in Harare, Zimbabwe. The co-founder of the training centre, Zimbabwean John Wilson, had attended a permaculture design course (PDC) given by Bill Mollison in Botswana while he was on a tour of sub-Saharan Africa in the late 1980s, and was inspired to bring permaculture to Fambidzanai. Some of the first South Africans to be trained in permaculture design came here to learn from Wilson and his colleagues John Turner and John Nzira (both of whom would move to South Africa and practice and teach permaculture there), and returned to South Africa to apply and share their knowledge.

Mollison only visited South Africa in 1991 on the invitation of Jeunesse Parks[2], founder of a non-government organisation in 1990 called Trees for Africa (later Food and Trees for Africa, or FTFA). Parks had heard of permaculture while visiting Australia in the late 1980s, and hoped to start a green environmental movement when she returned to South Africa towards the end of apartheid. She invited Mollison and raised funds for the visit. Mollison addressed a number of audiences here, including the Emissaries of Light, the Development Bank of South Africa, the South African Biodynamic Association, Fort Hare University, the University of Cape Town and Londolozi Game Reserve. These talks inspired a number of my informants to pursue permaculture ideas, and to take the PDC which was initially only available at Fambidzanai.

[2] Interview with Jeunesse Parks 27 May 2014, Johannesburg

Mollison returned to South Africa at Parks' behest in 1997. He taught a PDC with a former student from Fambdizanai, John Nzira, at a farm in the Free State on the Lesotho border known as Rustler's Valley. The owner of the farm had begun applying permaculture ideas he learnt from Parks, and apparently soon after the "hippies" began to arrive, and got excited about the idea. The farm was converted from a privately owned conventional agricultural farm to one which was communally held through a shareholding system, permaculture food gardens to provide for a restaurant and residents and the venue for music festivals that were new in South Africa. Rustler's Valley would become one of the first principle centres for the dissemination of permaculture ideas and practices in South Africa, and a mecca for a white South African counter-culture in the 1990s and 2000s.

Mollison's tour "sparked the awakening of permaculture" in South Africa, according to Florian Kroll[3], who visited Rustler's Valley over this time. Various organisations, projects, initiatives and even publications were initiated by individuals who were involved at Fambidzanai and Rustler's Valley, and developed out of the networks of people involved in the fledgling permaculture movement in southern Africa during this time.

Early Permaculture Initiatives in South Africa

Avice Hindmarch, who had taken the PDC in Zimbabwe, started a publication in the mid-1990s, the *Permaculture Villager Magazine*, with other Fambidzanai students including her husband, Alex Kruger and one Jeremy Burnham. Later, this was taken over by FTFA.

The Permaculture Association of South Africa was established over the same period. It was supposed to keep a register of people who had completed PDCs, and to communicate to its members about permaculture. According to Hindmarch, the association tried to impose strictures over who was entitled to teach permaculture. Politics began to emerge, and individuals tried to control each other and to seek out

[3] Interview Florian Kroll 9 January 2015, Cape Town

the benefits of belonging to the association even though it had nothing besides a meagre income from magazine sales. Permacore was an association established for permaculture in the Western Cape province during this time as well. Its former chairman, Fulvio Grandin[4] (a Fambidzanai graduate), said it was founded to act as an information node, but it eventually dissolved because it had no clear purpose, according to Grandin, "except as a book club to discuss status quo and information".

FTFA launched its Eduplant programme in 1995. The programme promoted school-based food gardening by providing training at schools in permaculture food gardening techniques and a biennial competition. According to Parks, the Eduplant programme raised the profile of permaculture in South Africa and showed that it could be mainstream. Others interviewees confirmed that the programme played an important role in the spread of support for permaculture in South Africa, and brought government attention to permaculture and food security - it was eventually supported by the Departments of Education ans well as Agriculture, Water and Forestry.

The 1990s and early 2000s saw the growth of new permaculture projects and initiatives, emanating from the activities and relationships built at Rustler's Valley. These early permaculture students would also get involved with a number of emergent experiments in rural communal living in South Africa such as Rustler's Valley itself, Thlolego Ecovillage in the North-west province, Byrne Valley in KwaZulu-Natal (KZN), Gardens for Africa at Umlaas Road (KZN), and the Klein Karoo Sustainable Drylands Permaculture Project (KKSDP) in the Western Cape.

PDCs were taught at these ecovillages and communities, as well as at other centres around the country, by a number of followers of the concept who circulated around the country working with the various permaculture-oriented organisations and initiatives. Amongst these were centres in the 1990s was the Kommetjie Environmental Action Group which hosted PDCs from 1996 until the early 2000s. School's Environmental Education and Development (SEED) was founded in 1999 by New Zealander Robina Mccurdy in Cape Town's historic agricultural zone, Philippi. Its aim was to provide environmental education and food security through the

[4] Interview Fulvio Grandin 10 April 2015, Cape Town

establishment of permaculture-inspired gardens at schools in that area, and PDCs were also taught here.

The JNF Walter Sisulu Environmental Education Centre, with support from FTFA, was established in 2004 to provide environmental education using permaculture techniques in Mamelodi, in Gauteng. 2005 saw the establishment of Siyakhana, an urban food production project using permaculture principles to address urban food insecurity, by Parks of FTFA and Michael Rudolf of the University of the Witwatersrand.

Permaculture gardens were established at a number of public venues including the Nelson Mandela Metropolitan University in George, the George Botanical Gardens and the Durban Botanical Gardens.

Permaculture Adoption in South Africa at the Cusp of Democracy

Individuals I interviewed about the history of permaculture in South Africa who were involved in permaculture projects, ecovillages and training over the years since Mollison's tours to the country had sustained an interest in the pursuit. Their personal trajectories reveal some of the motivations they had for taking up permaculture. They also indicate what was transpiring in South African society at the time which attracted them to the notion of permaculture.

Amongst the first facilitators of PDCs in South Africa were in their 60s and 70s at the time of writing: the youngest of these was Zimbabwean John Nzira, who had learnt about permaculture with Turner at Fambidzanai, and taught with Mollison at Rustler's Valley. John Turner (from Fambidzanai), Avice Hindmarch and her student, Raymond Auerbach, all "white" people were amongst the others. This older set of facilitators had an existing interest in ecologically-sensitive agriculture when they learnt about permaculture from Mollison or at Famidzanai. For them, permaculture provided an adjunct to their existing organic agricultural practices. Permaculture's critique of modern agriculture, its valuing of indigenous knowledge and its focus on food production appealed to their existing sensibilities around good agricultural

practice. For Hindmarch in particular permaculture provided a route to overcome what she saw as a sense of disconnection between people, and between people and the environments we occupy generated by reductive science and an economic and social history that engendered separation. They valued the holistic design framework that permaculture provided for thinking about resource use, but indicated that its potential for exclusivity, people's attachment to particular practices and its association with drug culture were its weaknesses..

The younger generation of informants and participants in permaculture in South Africa, who were in their twenties when they first learnt about permaculture, and in their 40s when I interviewed them, were attracted not only to permaculture's design system and agricultural approaches, but to its ideological content and potential as well. Their anecdotes and reminiscences which told of permaculture's history, illuminated aspects of the ideological and ecological appeal of the permaculture discourse to these mostly young "white" South Africans during the transition from apartheid to an ostensible democracy. Their stories also indicated the kinds of social networks that grew out of this shared adoption of permaculture's ecotopian design philosophy.

Inspired by Mollison's lectures and his book, Alex Kruger decided to hitch-hike from Cape Town to Harare to take the PDC with Wilson, Turner and Nzira in 1992 at Fambidzanai. There she met Ron and Avice Hindmarch who would initiate the publication of the *Permaculture Villager* magazine, as well as Fulvio Grandin, with whom she would go on to teach PDCs with in 1996. On her return journey to Cape Town, she stopped at Rustler's Valley. She described her visit to me: "My first visit to Rustler's was on my way home from Fambidzanai. They ran a lovely music festival, and I returned with a clothing business to sell tie-dyes. A network grew out of the people attending the music events". At Rustler's Valley she met a number of individuals with whom she would collaboratively teach PDCs in various other contexts, some of whom she would join to occupy a farm and establish a permaculture educational project, and her home years later.

It was while Kruger was living in the Wilderness area in the Western Cape some years on and ran a small community permaculture garden that she and a friend coordinated a small convergence of permaculture practitioners in 2004 in George. The

meeting included Raymond Auerbach (Associate Professor in the Department of Natural Resource Management at Nelson Mandela Metropolitan University in George), Florian Kroll (a food security specialist working with the University of the Witwatersrand), Leigh Brown (director at SEED) and Kent Cooper (permaculture consultant and facilitator) amongst others – who would all go on to establish permaculture projects and initiatives in other parts of the country, but especially in the Western Cape. Kroll believed that discussions at this meeting inspired the development of permaculture demonstration sites elsewhere in the country. He said, "occasionally we'd meet up, like the 2004 permaculture convergence in George: it sent impulses I still carry forward, such as the idea of resource and demonstration centres that show permaculture in action and an environment for people to learn in. We discussed it in 2004 and brought it to Siyakhana, also Rocklands Urban Abundance Centre [SEED] and Berg-en-Dal were conceived of as demonstrations. So there were long term impacts of the ideas. I also put these into policy".

Both Kroll and Kruger described how the relationships forged in particular at Rustler's Valley, but also at other gatherings and events, carried into the future. Many of those who had been involved at Rustler's Valley in the early days would later teach and participate in FTFA's school education programmes, at SEED's PDCs, applied permaculture training courses and school and community food garden programmes, and be involved at new organisations that either adopted permaculture practice or set themselves up as permaculture centres.

The interviews indicated the kinds of reasons why the permaculture concept was appealing to these young "whites" at this moment in South Africa's history. Kruger[5] recounted her initial encounters and impressions of Mollison and the permaculture concept he brought with him:

> Meeting someone who had initiated a movement like this was inspiring … There was excitement then around permaculture as a tool to express and educate and act on in a positive way, especially after the hectic 1980s protests. Here was a revolutionary vehicle that could also be positive. Mollison's visit

[5] Interview Alex Kruger 20 February 2014

> gave people encouragement to live what they believed in … Permaculture is a revolutionary vehicle with a lot of valid and important resistance happening to bring down a regime we didn't agree to. Permaculture is socioeconomically, environmentally and ethically aligned with much of the Freedom Charter. It was a way to move forward, how resources etc. could be patterned into the picture. I liked permaculture, it was dealing with the symptom of global economics that entrenched economic suppression around the world.

Kroll[6], who first learnt about permaculture sitting around a fire at Rustler's Valley, described it as a "free space that attracted a counter culture tendency and it was a place for people to meet in response to a perceived need for sustainability and way to exist in harmony with life around". He explained that "people in the initial network had a similar sense of responsibility and connectedness to life and consciousness larger than ourselves. The festivals were a space to experience ideas, and [had a] connection to the Rainbow Gathering[7] movement. There is still something there, the ethos resonated with the South African subculture - deep ecology and consciousness of the planet as an entity. Permaculture resonates with that ethos. The Rainbow Warrior culture is small … There were long-term networks of people working in parallel".

Rory Lillienfield[8], a member of the KKSDPP in his early forties, who would encounter permaculture through his friendship circles at Rhodes University, explained,

> Honestly, originally it was about the music. The 80s were dismal. We met at University - Andrew Dora, Grant, Pete, me, Tahir and others ... It was a counter-culture thing … It was a crazy time in South Africa. The whole hippy thing, pot smoking. Music had a lot to do with it. The music was so bad then, your choice was gothic or the 60s. It starts with music, and it came with what the 60s were - the notion of communal living in a rural environment … I wasn't

6 Interview Florian Kroll 9 January 2015, Cape Town

7 The Rainbow Gathering movement started in the early 1970s in the USA, and formed part of the bohemian counter-culture movement. Rainbow gatherings are temporary intentional gatherings where practices seen as an alternative to the mainstream and capitalism are enacted.

8 Interview Rory Lillienfield 1 April 2014, Cape Town

> a very nice young white South African with an upbringing fueled with patriarchal, racist, alcohol fueled socialisation that was fed to me … I grew up in the Krugersdorp suburbs. They were very *verkramp*[9]. Clive Darby Lewis, who was involved with the shooting of Chris Hani, was the MP of Krugersdorp. The Conservative Party replaced the Federal Party, who killed Chris Hani. At high school we wore a military uniform in kadets, and did 'youth preparedness'. It was just 2 steps from Hitler's youth league. At this point, in 1986, it was a state of emergency. The country was burning. We were shown a video of a black woman [being stoned] ... And the 'threats posed by blacks and communists'. It was horrible. Being in suburbia was horrible. Rather shoot me than live in the suburbs. It [his involvement in permaculture] was an anti-reaction to where I grew up in Johannesburg, built on money. It wouldn't be there if there was no gold.

Earth-Care and Colour-Blindness in a Society Engineered around Race and White Privilege

The interview material presented here suggests that permaculture began as a largely – but not strictly - middle-class pursuit amongst people classified as "white" and who associated with alternative agriculture, or a counter-culture akin to Turner's depiction of the back-to-the land movement in the USA in the context of a South Africa that had only just come out of the repressive apartheid regime. A small number of older people took an interest particularly in permaculture's insights into ecologically-sensitive agricultural practice, but the majority of followers of the permaculture notion were young "white" people who encountered permaculture through the nascent counter-cultural music festival culture that was brewing at Rustler's Valley and the ecovillages that were being newly established around this time in South Africa. Interviews suggest that at the moment of South Africa's transition from apartheid to democracy, these "white" youths saw in permaculture an avenue for creating an alternative to the racist, militarised apartheid government and the exploitation inherent to global capitalism of which apartheid was an extreme form, and the possibility for creating an ecologically-oriented and just culture. Some might argue

[9] Afrikaans term meaning conservative, uptight and bigoted

that the propulsion towards self-sufficiency and the formation of self-regulating communities would have appealed to whites who felt uncertain about their place in the new South Africa where their power as "white" people was no longer guaranteed. It could offer them a way of retreating into white *laagers*. I would argue, however, given the notion of the rainbow nation that was encouraged after apartheid, and a desire to be free of a racist regime, that these young "whites" did not seek to generate exclusive spaces to live out their Eurocentric cultural mores, but rather they sought not only an alternative to an exploitative and authoritarian state, but also to the race-oriented psychology it inhered. Permaculture offered a deracialised, universalist doctrine that saw connection to nature as a universal that superseded race.

Like the rainbow nation concept, permaculture offered a utopian doctrine and fantasy where race was no longer a primary deciding factor for social and ecological relationships. While the doctrine prioritised the creation of an alternative to the exploitation implied by global capitalism, it created the illusion that race was no longer a decisive factor in society, and allowed "white" adherents to see global social and ecological issues above local race issues which persisted into South Africa's version democracy.

Permaculture's Eurocentric origins and its adoption primarily amongst young "white" South Africans suggest that the discourse, although it is non-racial and depends on a notion of universal earth care that cuts across class, culture and race boundaries, foregrounds the cultural values and concerns of people of Eurocentric origin and pale skins. In that sense, it can be interpreted as a product of white cultural interests, and in terms of a theory offered in the whiteness literature, a product of whiteness. Its adoption in South Africa amongst mostly white people at the beginning of the 1990s might lie in its cultural appeal as a counter-cultural discourse relevant in a post-industrial Western cultural context that conveniently overlooks the significance of race. It could be seen as the wilful delineation of an exclusive "white" cultural space. However, I would argue that alongside these factors, this was a function South Africa's racially-ordered social structure that forced people to commune within the race categories instituted by the apartheid state as well.

Into the 1990s, South African society was intentionally shaped around the notion of race. There were schools, beaches and suburbs set aside for people who fell into the categories of "white" or "non-white", "coloured", "black" or "Indian". At the end of apartheid, those external legal divisions fell away, but the social relationships built over those periods remained, and the people who went to "white" schools or universities together, carried these relationships into the future after the end of apartheid. It is not surprising that the people who communed at Rustler's Valley, for example, were mostly "white". They did not set out for it to be that way, and did not keep only to themselves because they were "white". At Rustler's Valley, a number of these "white" people trained in indigenous knowledge and healing with "black" sangomas living in the mountains there. Others would occupy run-down railway houses in KwaZulu-Natal, sharing these with the "black" people who lived there or subsequently moved in. Initially, however, the permaculture doctrine was most attractive to young "whites" at the end of apartheid. In time, however, the social constitution of this nascent movement in South Africa would begin to shift along with South African society, albeit - like the country more generally - rather slowly.

Permaculture in South Africa twenty years after Mollison

My interviews and experiences with participants in permaculture-oriented organisations and activities revealed the ways that permaculture in South Africa developed and changed after the establishment of new centres of learning and living since the end of apartheid. I attended a number of permaculture-related gatherings, and visited a variety of these centres of learning to find out more about how permaculture had been taken up and put into practice some 20 years after the end of apartheid. I learnt more about the contemporary dynamics in South African permaculture principally through the two organisations where I conducted my research in the Western Cape, the rural AZPI and urban PES. I interviewed people who had taken PDCs with these organisations, their members, volunteers and supporters, and followed them to permaculture activities that they were involved in, as well as those organisations that they engaged with that were not strictly permaculture-oriented.

Various gatherings I was aware of in South Africa took permaculture as the main organising principle: PermaFest SA, the SEED Open Day, a Western Cape mini-convergence, Urban Permaculture Day, the Cape Town Permaculture Garden Party, the Permaculture Picnic, and a number of "permablitzes". I experienced permaculture in an international context through Boom Festival in Portugal, attendance at permaculture courses there and visiting projects on the Iberian peninsula.

PermaFest SA (2013 and 2015) was organised by a member of the AZPI and her partner who was PDC graduate there. It was hosted at a backpackers owned and managed by a family who were also involved in permaculture, one of whom was also a AZPI PDC graduate. A number of AZPI and PES PDC graduates volunteered and assisted at this festival, helping at the gate, and to set up the infrastructure. At the first festival in 2013, it was a majority of "white" people that attended, and topics such as the definition of permaculture, community supported agriculture, natural building, urban food security were tabled. The second festival in 2015 was constituted again by a majority of "white" people, although an art and music contingency from Pretoria, the Tyisa Nabanye group from Cape Town, two Rastafarians who hitch-hiked there from Johannesburg and participants from SEED introduced a slightly broader social spectrum. The range of topics also had diverged away from staple permaculture topics, to include themes around child-rearing, soil micro-biology, water purification, the connection between yoga and permaculture, cryptocurrency, and the show-casing of various permaculture and non-permaculture related initiatives – many of which had been initiated by graduates of PDCs. The social constitution of these events may have had to do with the fact that the location of the festival was far from metropolitan centres, and out of financial reach for many non-"white" and monied participants. The festival, however, was not a commercial enterprise, and left the organisers out of pocket.

Another was the "Urban Permaculture" day organised by a representative from the Environmental Monitoring Group (EMG) and South Africa Water Caucus, Thabang Ngcozela[10] – who had also drawn a number of youths involved in permaculture into

[10] Interview Thabang Ngcozela 17 April 2015, Cape Town

EMG's environmental justice programme. Ngcozela was also helping his village in the Eastern Cape to become more self-sufficient through using permaculture design strategies and engaging with the Global Ecovillage Network. He encouraged young "black" people in Cape Town to attend the courses offered at PES through his work at EMG. Members from the Makhaza Wetland and Food Growers association (mostly "black" women), representatives from the African Centre for Biosafety (which included one woman who was very involved at Rustler's Valley and an ex-member of the AZPI), the Surplus People's Project (SPP), the Philippi Horticulture Association, and the Food Sovereignty Campaign participated in this meeting where issues such as finding a voice for urban farmers, genetically modified seeds, international permaculture day, urban farming, and the food sovereignty campaign were discussed. Also discussed was the generation of a database for sharing information with urban growers. In this case, the majority of participants were from Khayelitsha and the grower's association, although there were a handful of people who, like myself, did not live in Khayelitsha and would not be categorised as "black", but rather "white".

The presence of permaculture practitioners that I met in contexts outside of formal (or less formal) permaculture events indicated that they engaged with other individuals, organisations and issues that did not necessarily identify with permaculture. Individuals who resonated with permaculture ideas did not restrict themselves to activities promoted under the banner of permaculture. By the way in which practitioners and participants spoke about it, it would seem to be a closed discourse with a delineated membership (by virtue of having done a PDC or engaging with individuals involved in permaculture organisations). But these kinds of gatherings, and the work of individuals, showed that permaculture in South Africa was part of a wider network of practitioners involved in other organisations, who were not dedicated as such to the discourse of permaculture but who had some shared motivations and desires, like food security, access to nature, social justice, and environmental justice.

Interviewees who had taken PDCs or been involved in permaculture practice through courses or gatherings were involved with other organisations including the

Biodynamic Association of South Africa, Abalimi Bezekhaya[11], Surplus People's Project (SPP), African Centre for Biosafety, Earthlife Africa, Transition Towns, the Global Ecovillage Network, the Southern Cape Land Committee and the Environmental Monitoring Group. I attended other events that were not organised under the title of permaculture, but where many participants in permaculture practice and its dissemination – Ikasi Project Green's Seed Saving workshop, in talks with government representatives on the South African Seed Bill that was under discussion, and the Psychotropic Plant Conference. At the Seed Bill discussions, for example, I ran into an ex-member of the AZPI who worked at the African Centre for Biosafety, two participants from PES, a biodynamic farmer who also was involved in teaching PDCs, and John Nzira. Here I also met small farmers from Johannesburg and Venda there who were familiar with permaculture.

The Greyton Transition Town movement, for example, hosted a "Trash to Treasure" festival every year. A number of the board members had taken PDCs. One of them, a person who would have been categorised as "coloured" had taken the PDC at AZPI, and was very involved in school's environmental education in Greyton, as well as a tree planting and food forest project in Zambia through an organisation called GreenPop. The international Transition Town movement itself was initiated by a permaculture practitioner in England.

Wendy Crawford, a biodynamic farmer who had been a PDC facilitator and biodynamic practitioner who worked intermittently with the AZPI PDCs, PES, and Abalimi Bezekhaya and other permaculture projects, invited me to Ikasi Project Green's Seed Saving Day in Khayelitsha. The workshop was held at the project's school garden in Khayelitsha. It had been initiated by three young "black" men, friends who had decided that they wanted to "make gardening cool" and accessible to young people living near the school in Khayelitsha. They had been receiving advice from Crawford. The did not use the term permaculture in their work when I met them, but engaged with the organisations and individuals who did. The audience at this event included some German visitors working at Kaos Pilots, an SPP representatives

[11] an urban agriculture (UA) and environmental action (EA) association operating in the socio-economically neglected townships of Khayelitsha, Nyanga and surrounding areas on the Cape Flats, near Cape Town, South Africa

(one who had been at the Seed Bill talks and the Urban Permaculture day), local Khayelitsha youths and children, and representatives from a few environmental and food-oriented NGOs in the Western Cape that included Abalimi Bezekhaya, Harvest of Hope, Green Chair, a doctor, a horticulturist and farmers. After we were introduced to the project, the group left to visit PES. Here, PES's seed saver initiated a discussion about the importance of saving seed, and how to go about it. This was the first time that I met the Ikasi Project Green team, whose members would attend permaculture events like the Garden Party and the PermaFest 2016. A year later, they would be flown to events in Paris and Italy to showcase their efforts in South Africa.

Events such as the PermaFestSA held in a forested backpackers near Plettenberg Bay and the Urban Permaculture day in an apartheid-era suburb indicate that people did gather around this notion of environmental care proposed in permaculture in South Africa. The attendance of these events predominantly by one race group ("well-off whites" in the first case, and "poor blacks" in the second) suggest that the movement was not as integrated as its own principles might demand. Race and class divisions were evident in permaculture movement in South Africa. The divisions were not instituted intentionally, but were a product of a society divided along race and class lines since the institution of colonialism. That is perhaps part of the problem with permaculture theory overlooking the significance of race in the South African context where the society has been historically engineered around race with class privilege. Permaculture theory would hope that the adoption of a common ethic of earth care should provide the basis for the formation of community and social transformation. However, it would seem that without facing up to the inequalities associated with race that were engineered under colonialism and apartheid, the divisions would remain. In this sense, permaculture's colour-blind ideology overlooks the ways in which a historical legacy of race-based social engineering that corresponds with class continues to shape who can access permaculture practices and its emancipatory potential.

Organisations and individuals tried in their own capacity to address this kind of inequality of access, even though these actions of individual organisations and people might not have changed the entire social structure of the country. PES, for example, provided training opportunities for free to underprivileged youth and resources and

technical advice to people living in the economically depressed suburb where the organisation was based. Permaculture facilitators like Alex Kruger offered educational opportunities to PES graduates to develop their facilitation skills where she lived for free. Two of her students and PES graduates established Guerilla Gardeners, a collaboration between these "white" and "non-white" friends from middle and working class backgrounds making permaculture and other technical knowledge available at very reasonable prices in Athlone, a suburb set aside for people categorised as "coloured" under apartheid.

The Cape Town Permaculture Garden Party was organised collaboratively between "white" and "black" enthusiasts at Tyisa Nabanye, a "black" permaculture initiative in the city centre. In return for the use of the facilities there, the members were given access to the PermaFestSA and transport to the event. Although it was a money-free event, attendants stashed money in all manner of orifices, and this all went towards accommodations at the festival. Moreover, the event and raised the profile of their own organisation.

FTFA and PES both worked predominantly with underprivileged "non-white" schools. Individuals who participated in permaculture but were involved in activities and organisations that did not carry the permaculture label - like the Seed Bill or Ikasi Project Green's Seed Saving Workshop also suggests that the movement was not strictly geared towards the cultural interests of "white" people, or only accessible to people with very pale skins alone. Interviews with individuals also indicate that the discourse is not attractive just to white people, or only accessible to them - albeit that their access was made possible by their connections to white people. But, given the existing inequalities in South Africa and a heritage of inequality that favours white skins, it is not surprising that most of those in positions of privilege and power in this context were white. However, that is also a reflection of the sites where research was conducted. Had the research been conducted in a different province, like Limpopo or KZN for example, it might have appeared that permaculture had resonated with "black" cultural interests.

In the following section, I present limited findings on interviews conducted with individuals who had taken up permaculture in these various social contexts since permaculture's inception and consolidation in South Africa.

Growth of a Movement: Permaculture in South Africa twenty years after Mollison

My involvement at the two Western Cape permaculture organisations, PES and AZPI, allowed me to interview PDC graduates, volunteers and home gardeners. These interviews provided a sense of the kinds of motivations that individuals from different race and class backgrounds had for engaging in permaculture, what they derived from it, and what they did with their new-found knowledge.

The majority of people who enrolled on PDCs with AZPI were "white" and middle-class, and paid for their courses (R6500 for 12 days including lunch and teas) – although the AZPI made opportunities available to those who could not afford the full fees by allowing them to assist on the course, or volunteer ahead of time in exchange. Many of them were either seeking technical knowledge to apply at their homes and become self-reliant, looking for a change in their lives and lifestyles,or were in a period of personal transition.

Some were actively seeking alternatives to mainstream agriculture. Others yet did the PDC to meet and make friends. A "passion of the environment", a desire to ameliorate ecological damage, "treating the land better", contributing to the greater good of the planet and to develop a "closer relationship with nature" were common motivations for those who took the PDC there. Accounts from two such participants provide some insight into people value they derived from engaging with permaculture and the PDCs.

Robert Ferreira[12] (28) took the PDC at Pypsonderwater (home of the AZPI) which he discovered online looking for information about permaculture to supplement his work as a designer. He had been working with design concepts like biomimicry and these

[12] Interview Robert Ferreira 28 February 2014, Cape Town

seemed somewhat purposeless to him. He said, “Everything I read on the AZPI website were the words I was looking for … Permaculture was waking up my natural side, it was a positive way of thinking as soon as I converted to the permaculture lens my life changed … Permaculture provided a way of being beneficial and a better way of living … I got beaten up in Joburg, I have a titanium plate in my head. I was fed up with Jozi, and I had to get out of the city … My life was in a mess at that stage - unhealthy lifestyles, questioning what I and others were doing. Something was not right. I realised it was my own disconnection with nature. I realised it was my perception that counted, my perception of my world around me - permaculture told me the same thing. It was all about observation, it also tended to the internal world … I felt my presence in everything. From then on I could never be alone knowing I was everything and everything was in me … So my changes rippled to others … I would promote it because I know what it did for me, the liberation, the connection, if we all understand it we can work together … You look through these lenses and there’s no other way to do it, everything else seems wrong”. Dias went on to facilitate PDCs at PES with Alex Kruger, and then started a joint initiative for community building there with two other ex-employees from PES including Mzukisi Zele, who features below.

Flip Bezuidenhout[13] (40), whom I met when he was volunteering at the AZPI, learnt about permaculture through a documentary on Cuban permaculture – *The Power of Community*. He said, “The documentary sparked something … [It] was a turning point in my life ”. After finding the AZPI online, he took the PDC at Pypsonderwater. He said, “I felt a lot of warmth from the people, even though I was going through a lot: I left my work, my girlfriend and I broke up. I was struck with this and I felt so much love and passion for the idea of permaculture. The content was intense, a lot of information … I felt I was accepted, no matter where I was from or my issues … The design process was new, the steps and phases of designing a space. Intersecting ideas around alternative ways to grow food - swales, guilds, appropriate tech, natural building.”

To Flip, permaculture meant “to be as self-reliant as I can, and being like a custodian in the space you work, grow food and build community”. It was important to him

[13] Interview Flip Bezuidenhout 14 April 2014, Pypsonderwater farm

because he felt it gave him the “freedom to decide how I want to live my life ... For people to get more control in their own lives, without so much control from government and outside. It seemed a more fascinating movement, than the alternative of living a 9-5 in the suburbs drinking a lot, a hopelessness I felt for a long time. Maybe it was working in retail. Our consumer lifestyle came into question and through the course something shifted”.

The experiences of these two informants and the value they derived from engaging with permaculture mirrored to some extent the sentiments and reports of others who had participated in AZPI’s courses. Many of these mostly middle-class “white” people learnt about permaculture through word-of-mouth, films and internet research, Very often it appealed to their existing sentiments towards nature, and in some cases to their extant professional interests. Frustration with ecological damage and unfulfilling work and lifestyle, as well as significant life changes led many on a search for purpose and a desire for change both within themselves and the world around them. Permaculture offered a new and positive way of engaging with the world and a sense of connection and belonging with other people and nature. It also offered an alternative, through the knowledge practices promoted, to the negatively charged experiences associated with modern living, such as consumerism, city life and state control. Change at the level of individual consciousness was emphasised, and many reported a change in their own perceptions and lives as a consequence of engaging with permaculture ideas. A consequent desire to share their insights and experiences emerged amongst many of those whom I interviewed through the AZPI courses.

PES offered PDCs through an Applied Permaculture Training (APT) that was part of a youth internship programme at the time of writing. The organisation also accepted volunteers to work in the gardens, and offered support to home gardeners living near the organisation’s headquarters in the Cape Flats. The majority of PES's PDC and internship graduates were “coloured” or “black” people that had been targeted by the organisation’s programmes as beneficiaries of workshops and educational programmes where they were able to learn about permaculture theory and practice. I provide accounts from ex-employees, PDC graduates and home gardeners who were

involved at PES to provide some perspective on the ways that these participants experienced and valued their engagements with permaculture.

Mzukise Zele[14] was ex-PES employee involved in an urban permaculture project on an old military base in Cape Town's city centre known as Erf 81. Zele's experience tells the story of one of the shoots of the permaculture movement in South Africa. He had been selling fruit on the road side in Philippi, an urban agricultural area in greater Cape Town. PES had just been born, and still had its offices near to where he was trading, alongside Abalimi Bezekhaya. He was interested in PES's activities, and began to volunteer there. He learnt about permaculture techniques with facilitators like Alex Kruger and Wendy Crawford, and also began to facilitate teachers' and school programmes through the organisation. After leaving the organisation some years later, he met two young men with whom he learnt about the decommissioned military base in the city centre. Here Zele met others with a shared interest in food gardening, and they established an NGO, Tyisa Nabanye. The name means "feed the others" in isiXhosa. 5 of the 6 members would be classified "black" under apartheid racial classification. Using permaculture design strategies, Zele and the other members established food gardens and a small nursery on the land. They grew food, ran a weekly market and hosted volunteers in the garden. They planned to educate township youth about food security and food production. Two of the project members took the applied permaculture training (APT) at PES, and continued to work with Tyisa Nabanye and live at the military base. Tyisa Nabanye hosted the Cape Town Permaculture Garden Party (a money-free event of about 400 people) – intended to promote the Permafest – and in return the members got tickets, transport and accommodation for Permafest SA 2016.

For Zele, permaculture offered principally a useful framework for designing food production systems. He developed his practice and knowledge through engaging with PES and a lineage of permaculture practitioners through from Fambidzanai, Rustler's Valley, AZPI to Tyisa Nabanye. In that process he drew other, principally "black" people with a shared interest in food gardening, into permaculture practice.

[14] Interview Mzukise Zele 27 May 2015, Cape Town

Chuma Mgcoyi[15] (23) was one of these members of Tyisa Nabanye. She had been included in an environmental justice programme as an intern with the Environmental Monitoring Group by Thabang Ngcozela who encouraged her to take the APT at PES. She later went to work at the Surplus People's Project, where she provided training in agroecology to disadvantaged farmers in the Northern Cape. She said to me that they called it agroecology, but she was teaching permaculture.

Mgcoyi grew up in Port Elizabeth and studied performing arts there, but could not afford the diploma, and went on to work as a stylist and in stage craft. She moved to Cape Town, and came to live at Erf 81 in the city centre. She said, "I couldn't afford rent. I came to see Andre, looking for a place to sleep. He gave us a room to stay". There she met Zele and learnt more about permaculture with him. She became involved in Tyisa Nabanye. She told me, "We started the garden and he told me more about permaculture course. We all wanted to go but [I was chosen] … We did the basic PDC and in the internship we implemented. I didn't think I'd do it. I was not working and needed a job to sustain myself. I was offered a job at Company Gardens, but I returned to PES for the internship".

Chuma related her experience on PES's course and internship:

> On the internship I was amazed at the group we were. It wasn't just permaculture. We talked about social issues and awareness. The journey was amazing, it changed my life, I'm not the same person, my mind switched. What's happening on earth - I don't just think about South Africa but the whole earth. People from Germany were there, getting to know different cultures and creating new cultures ... You learn about patterns of life and plants. I found myself cutting patterns. Permaculture helped me to observe before interacting. I apply [the principles] every day. How I talk has changed. I think about the next person, and what I'm doing to the earth. It has changed my life. Before I did working with plants, I didn't take the time to connect with them. I was aware of the hydrological cycle, with permaculture it made me think - I'm managing systems and connecting soil and sky, planting nitrogen-fixers, its a life cycle. It

[15] Interview Chuma Mcgoyi 20 January 2015, Cape Town

> is amazing to understand, it feels good to know about it and pass it on … I want to host workshops on permaculture and food in the future. I started last year to write theatre pieces and raise awareness about ecosystems and social issues. We talk about formal and informal settlements, poverty, especially from Khayelitsha … Permaculture should go into schools. It is a way of life, how one should think - aware and conscious of everything.

Mgcoyi, like Ferreira and Bezuidenhout, felt that her life changed through her engagement with permaculture thinking and principles which brought about a shift in awareness from not only her own needs and perspective, but those of others and the globe. It provided her with a sense of connection with others and with nature, and a means to address social issues through developing an awareness around food, natural processes and the environment beyond just the individual but through a shift in individual perspective. She wanted to share this way of seeing and thinking with others, and applied her knowledge in the other organisational contexts that she worked in.

Steve September[16] (48) worked as the nursery manager at PES and attended the internship programme with Mgcoyi. He grew up in Heideveld, on the Cape Flats. September already had an interest in things environmental when he got involved with PES. He had been volunteering in municipality-owned gardens in Lentegeur, a suburb of Mitchell's Plain, and also worked at a local primary school. It was there that he met a PES employee one day who told him about the organisation. The school sent him on a teacher's training course with PES, where he would later take the PDC internship programme. He was a qualified painter by trade and had his own business before, but had previously been involved in gangs. He said, “Coming out of prison was ... a turning point ... I was second in charge of the Fancy Boys … I dealt with guns, ammo, money, I kept people in line. From there, to become nothing, you have to live ... I could speak to the gangsters about the parks and ask them to move. Many of them helped me do the parks”.

[16] Interview Steve September 3 June 2015, Cape Town

He said,

> the amount of information I got from grabbing those tools, it has been an amazing journey and rollercoaster ride with regard to my personal growth, my mindset about what I eat, like cutting down on meat for health reasons and what I see in the documentaries from the APT ... The APT and internship were a blast of information, like Boof! Out there - just to grab it, and that's what I did. As a new experience, if you learn something 2 years ago, [and] you still remember it must have had an impact ... And the group. I learned from them, togetherness, positivity, the ways that we exchange knowledge, from different angles. We're all from different creeds.

He remarked on the ways that he felt he had been affected by participating in PES's internship and working with gardens

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> Permaculture and gardens have played a huge role in my change. I don't know how to thank PES. It has done amazing things for me, I feel more comfortable to speak openly, do things differently so people can understand me. It came at the right time, PES's timing was perfect … I'm more responsible about making decisions and thinking about the next person, telling others what I have learned and feeding them information about what I know. I love sharing information with others still in the dark about information for planting. I share with my friends, and they react in a positive way, they've seen the change in me, what I was and what I have become … I had a chapter of gangsterism and drugs that took over my life for 6-7 years. I've grown away from the mindset of the negative stuff. And learned to do things more positively, and have a more positive aspect on life. It happened for a reason.

Although September had an extant interest in gardening, he felt that his engagement with permaculture facilitated a positive internal transformation of his relationship with himself and society, his health and in his life. His engagement with permaculture allowed a shift in perspective to thinking not just about himself but those around him as well, and he valued the information that he gained and could share with others.

The accounts from these three individuals who engaged with permaculture through PES indicate some of the more common perspectives of others whom engaged with this organisation. Reports of their lives and ways of seeing the world having shifted to being aware not only of their own needs but those of the people and environments around them as well, even to the global scale. The knowledge they gained and most valued around food production and their shifts in awareness was something they all felt they wanted to, and did, share with others. In the process of engaging with the knowledge and ideology transmitted in the permaculture discourse, they developed a sense of connection with other people and with nature. To a great extent, these people who grew up in townships and suburbs created through apartheid's Group Areas Act and in families exploited by that system shared many of the values and sense of benefits with the "whites" who benefited by that same system through their engagements with permaculture. Greater connection to other people and natural entities and cycles, a shift in internal awareness of their relationship with others, and a desire to share their insights with others were common phenomena that emerged in the research findings. However, while the "whites" expressed a frustration with modern industrial life (such as urban living, the consumerism or governmentality), those who came from backgrounds of economic and social disadvantage found in permaculture new economic and professional opportunities. People from both "white" historically advantaged backgrounds and those from historically disadvantaged backgrounds took that knowledge and applied it in other work contexts and began new permaculture initiatives - very often, together. Their enthusiasm and their application of permaculture ideas in other contexts, their desire to bring permaculture to others, displayed a strong emphasis on the transformational capacity of permaculture ideology and practice.

Interviews conducted with PES's home gardeners reflected a difference in the way that permaculture was understood and valued by people who did not engage as intensively with permaculture ideas through the PDCs, but had been provided with resources and technical knowledge for home-based food production.

Hettie Davids[17] (46) was a member of PES's home gardeners project, and lived a few blocks down the road from the school where PES's offices were. She had worked as a supervisor at a shoe factory, and after being retrenched from her job began her own laundry business from home. She was already growing flowers, succulents and ornamental plants in her front garden before she became involved with PES, and described how she would save money to buy plants for her garden. Gardening, she said, "made me realise I have patience … It is my passion. It does something for your soul, you can only benefit".

Davids learnt about PES's home gardeners programme through the Plainsman, a local newspaper. She said, "I was into gardening and thought I would see what it was about". Hettie was given a container, compost and vegetable seedlings initially by PES. When they saw her success there, they offered her a "permablitz": PES would provide materials, manpower and advice on her garden, and invited local residents to participate in the planting. She also received a 5000l rain tank.

Davids grew a range of edibles in her back yard of about 4mx5m: three varieties of tomatoes, spinach, brinjal, wilde als, beetroot, celery, chilli, parsley, mint, watercress, oregano, pak choi, kale, carrots. These were new ingredients for her, she said. She and her husband juiced with different ingredients for their different health conditions.

> What is nice is that when I don't have time to go to the shop for parsley for meatballs, I can pick herbs for the soup, I can go to PES for other things. It is a wow! Another door. I get veg or seedlings, it is in my reach with PES … More people must be exposed to this and hopefully the light bulb will go on. To maintain this is hard work. I catch greywater in the bin from the washing machine for the front (ornamental) garden ... My husband has to scoop water at night. So some people might neglect it out of laziness … People are wow! When they see my yard. Did you really do this? The idea is there is a little space for a braai, and to get fresh veg from the garden for a potjie. This is the kind of thing you see on TV, like on the food channel the woman [picks veg

[17] Interview Hettie Davids 4 June 2015, Cape Town

> from the garden]... Why must we only watch it on TV? You can make it in your own space.

Davids had participated in PES's workshops and from these understood that "permaculture … is different types of vegetables together. To maximise space and get more for you to harvest. It is more for home-based people due to space. That is why it is important to grow what you will use, otherwise what is the point? Most things here I use. I'm excited for the tomatoes".

Wallie Stevens[18] (64), also a beneficiary of one of PES's permablitzes, was a retired ink manufacturer and painter. He lived in a suburb near to PES in Mitchell's Plain. He had developed an interest in gardening after being retrenched and he started drinking. He told me, "One day I went to the shop and saw people up to stuff. They were gardening. That's where the bug bit me and I did a course with them, and I started small-small at home".

He learnt about PES in the Plainsman, and signed up as a member of the home gardeners programme. He said, "I was interested in food gardens, but I didn't know much about what to do and when to do it. I learnt about compost, worm farms, trench beds, flat beds, pruning and propagation. I did a few workshops with PES". The notion of permaculture he got from these interactions was that it had to do with "worm farms, gardening, everything around the house, water management. For example, I'm trying to reduce my water bill, I use my waste water wisely. Like the outlet pipes, I cut them and take buckets and use that water in the garden and use less water, it is energy saving, and mostly saving money".

He said,

> PES has helped develop my knowledge. I will never have enough knowledge. Every day you come to people's homes, I ask them about their gardens, and I learn something. Very important to me is that I try to do what that person does. I make my own poisons. I want an organic garden, no chemicals. It is healthier

[18] Interview Wallie Stevens 5 June 2015, Cape Town

> to have an organic garden or a natural garden. I've seen the difference between their food and mine. If you make food, the difference between the shop and the homegrown is huge. And the smell, if you make a pot of green beans, you get that smell, but if you buy it from the shop there's no smell, you have to put your head in the pot. It makes me feel proud. My garden was small, we made more beds, I learnt things I applied at home.

Stevens had 37 different kinds of edible and medicinal plants growing in his garden, many of which were supplied by PES: four types of chillies, spring onion, lettuce, brinjal, tomatoes, pumpkin, broccoli, potato, kale, basil, sweet potato, marigold, green beans. He said that his garden made him feel proud: people would come to look a it, and complimented him on it. "My health has improved a lot", he told me.

> I am diabetic. The garden is very important. You must eat fresh coloured vegetables. As I go I read what types of veg I should eat and I try to get it. How I feel, the way my sugar is... It was 29 units. And when I started it came down rapidly. This morning it was 7. My knee is swollen. I drank the vegetable juice. That's why my sugar balanced. That never happened before. I collapsed twice in the street, once I woke up in hospital but it never happened since I had the vegetables. Some mornings I get up and stand against the wall to get steady, now I just about jump out of bed. That's why the garden is so important to me. Some of my friends in their 60s, they ask me what is going on, you look like a young man! I tell them, come into the garden, and I'll show them.

Stevens and Davids were just two of the home gardeners involved with PES, and their perspectives cannot be taken as representative of all participants. But their perspectives indicate the difference between the way that permaculture and its utility was understood between people who had and had not been exposed intensively to the permaculture doctrine. They valued it as a tool for gardening, a practice that provided them with a sense of pride and solace, and a source of fresh foods that contributed to better health. Their engagement with the organisation provided access to resources to help them do that, technical advice and a means for engaging with other gardeners living in the area. Unlike the other interviewees, whether those who had taken PDCs at the AZPI or at PES, they did not really see it as a tool for social or even global

ecological transformation, and they did not speak about the emancipatory potential of permaculture to create, for example, an alternative to seemingly constrictive global economic policy. They did not see it as a tool to bring about political change. However, their engagement in the practices did seem to augment and support their access to things like fresh foods, and thereby acted as supplement to their income-generating activities and health. While they did not report any major personal transformations like all the others did, as a result of their engagement with permaculture thinking and practitioners, they also seemed to share a desire to make the knowledge and activities accessible to others, realising, however, that it might not be attractive to everybody.

Permaculture Moving Through and With South African Society

The historical account provided in this chapter indicates that permaculture was initially embraced primarily by "white" South Africans seeking alternatives to alternative agriculture, or who were attracted to permaculture's counter-cultural discourse in the wake of apartheid. Permaculture spread initially from the 1990s into the 2000s through face-to-face talks, permaculture design courses and the exchange of ideas between people involved in newly established ecovillages and environmental education centres that provided such education through the lens of permaculture at schools. Following the establishment of centres of learning at these sorts of venues, permaculture began to reach a bigger audience that included middle-class "whites" and "coloured" and "black" people from less monied and less privileged backgrounds, who themselves initiated new permaculture projects and venues for learning. The people involved in permaculture that I interviewed were connected with a variety of other organisations and part of a bigger global movement towards environmentalism that challenged the notion and practice of global capitalism. In South Africa, it is one amongst a range of anti-capitalist discourses that promote environmental concerns. Although the discourse can be understood as a "white" or Western cultural concern in terms of whiteness studies, it yet displays overlaps with a number of contemporary social movements in South Africa that share concerns around the meeting of basic needs, alternatives to profit-based economics and also traditional conservation matters. While the movement in South Africa was initially primarily taken up amongst "white"

people, it has become attractive to people of various racial backgrounds. Yet it still reflects the general race-oriented divisions that are evident in South African society more broadly. The features of the discourse and practice that appear most attractive to its adherents in this country across race and class divides include that it offers tools to grow and access food, and health; a path towards self-realisation that also offers a means to think beyond the self; and a means to change the world through that shift in awareness of self and others - although its less pragmatic and more ideologically appealing aspects seem to be recognised primarily by those exposed to permaculture thinking through the PDCs.

In the following chapter I explore the ways in which permaculture ideas were taken up amongst a group of predominantly "white" people, many of whom had been exposed to permaculture ideas and practices when they first arrived in South Africa.

Chapter 7: Arid Zone Permaculture in Practice - Setting the Scene

This chapter provides a detailed account of how permaculture theory was put into practice at one site in the Western Cape province of South Africa – the Arid Zone Permaculture Initiative (AZPI) located on Pypsonderwater farm. Herein I describe some of the reasons that the members of the project became involved in it, and the ways in which they went about trying to realise the ideals of permaculture - to integrate human settlement and production with natural systems, and realise the ethics of earth care, people care and surplus share as a basis for their actions.

The data presented shows what happened when permaculture was enacted in this context – the kinds of challenges that emerged in trying to realise the ideals outlined in permaculture theory and philosophy; and the ways in which participants experienced trying to realise these ideals.

As such, this chapter provides a partial account of one expression of this social movement that seeks to overcome the dualism between humans and nature that has been shown to have manifested in contemporary political-economic and conservation policies, which a range of social movements theorists and environmental anthropologists call our attention to.

I describe here how the initiative came into being, the kinds of people who participated in it, and their motivations for doing so. I outline some of the ways in which they went about putting permaculture into practice in the particular context of this arid zone in South Africa, detailing the kinds of social innovations and structures that they developed to realise the ideals of permaculture. I also provide some description of the local ecology and landscape, and describe how participants engaged with that using permaculture principles and theory in terms of both broader scale land management practices and homestead-based interventions and design choices. These kinds of data provide basis for analysis in the next chapter.

The Arid Zone Permaculture Initiative

The Arid Zone Permaculture Initiative was created amongst a group of friends and acquaintances in the late 1990s, and found its home on Pypsonderwater farm in the Western Cape province of South Africa. Some of the project's members had been engaging with permaculture ideas for some time before, and had hoped to bring these into fruition here. The AZPI was formally established as a permaculture project some years after the land was bought in 1999 after a Section 21 company legal structure was adopted as the vehicle for land-ownership.

There were three groups who joined together to seek out land where they could live: one was a group from Knysna in the Western Cape province, the second was from Kwa-Zulu Natal and the third was from Cape Town. Many of those who got involved had met each other at university and at Rustler's Valley, had taken PDCs entered into the project with the aim of practising permaculture there. Others had hoped to use the land as a retreat space, amongst other aims.

One of the original members, Roger Duncan[19], reported that students from the University of KwaZulu-Natal and Rhodes University began to work at a site near an old railway station in KwaZulu- Natal (KZN) where they put their permaculture ideas into practice. Some of these people had been at Rustler's Valley, and connections were made between other permaculture sites like Byrne Valley (KZN. For Duncan, "[permaculture] was the first consciousness of alternatives to a white/western/apartheid way of life."

The Knysna group was made up of people from the KZN project, and a few others from Knysna. They started a permaculture group in the late 1990s and for some time they met once a week and worked in each others gardens, and in a Rastafarian community in a Knysna township. They heard that KZN contingent was looking for land, and joined them in the initiative..

[19] Interview Roger Duncan 1 April 2014, Cape Town

The Cape Town group, made up of artists, musicians and actors, amongst others. They had apparently been drawn in largely because the original group of people from Knysna and KZN did not have enough money to buy land by themselves.

Finally a group of twenty-one people coalesced who could each invest about in land. Duncan explained, "we realised then that we needed many shareholders for the cash". Kevin Collier[20], who was involved at the KZN project made a few trips seeking out appropriate land, and identified a farm in the Baviaanskloof, but it was unaffordable. He explained, "We got members together, they put their money in ... It slowly pulled itself together. Our budget limited us - we bought a farm with no water." The group, including those from Knysna, KZN and Cape Town was made up of loose and long-standing affiliations, and they sought land in the Free State, the Kamanassie, Anysberg, Baviaanskloof and Klein Karoo area, and viewed properties together.

They had certain criteria in mind – that there should be enough space for all 21 of them, and that the land should have agricultural potential and water. Collier explained that they had a dream for the criteria for appropriate land - "remote yet with proximity, surrounded by nature and not people. The Little Karoo met the bill". They viewed two properties, and decided on the 400 hectare Pypsonderwater farm, because of its size and beauty, there were no existing land claims on it, it was within 3km of a major watershed, and it was within their budget. They bought it without water rights because of their limited budget. The twenty-one people pooled together the R210 000 to buy the farm in 1998. They each contributed an additional R11 000 in the first year of operation under their joint ownership.

After the initial establishment of this project, a number of others who were not directly linked to these groups came and left the project. Duncan estimated that thirty to thirty-five members had moved through the project. He said, "All sorts of fascinating and interesting people have moved through Pypsonderwater. There are more ex-shareholders than current members. Only four of the original people are still there. About 30-35 people have moved through there and left. And it was through no weakness of their own. It is the hardness, of the work, the inability to make money,

[20] Interview Kevin Collier 2 March 2014, Cape Town

and the difficulty of interacting and living together without rules or laws." Cindy Stoller[21], who joined some years after the project was established, described "waves of exits" - first in the late 2000s, when a number of the artists' group left. New members arrived to take up their places. In time, some of the later additions also left. Below I provide information about the constitution of the group and their motivations for joining, and further on in the chapter, they ways in which they tried to put permaculture theory and philosophy into practice.

A range of people, including professionals, were party to the project's initial establishment, according to Barnes, its original intention was a site for teaching sustainable living. According to Collier, "we wanted a place to put permaculture into reality, and an opportunity to have land and live freely. This is one point of the 5-dimensional reality, the decision to be free. It is an unfolding journey, you go through layers of the self and the world. Renting land is not freedom. It is a situation of dependency". Josh Petersen[22] agreed that from the outset, the undertaking began with an educational vision, but from his perspective, "There was more balance with the artistic edge, but permaculture took over. Permaculture was always a dominant feature, but others played a bigger role. There were many capacitated people keen to do things here, like having a dance studio."

But for Smith - one of the founders of the project - Pypsonderwater had not started out as a permaculture project, "it was more just people with similar values – a broader ecological value, ethical values - my friends with like minds. We hadn't all prescribed to a particular ethos". Steve Jones[23] similarly felt that the project was not established in particularly coherent manner, saying that, "It was a collection of random people with their own desires. Josh first bought 7 shares and people paid him off. That's how they could buy. We didn't know much about that farm." Yet, the long-standing relationships built at Rhodes University, and grown in KZN, suggest that the idea of an educational project for sustainable land use through permaculture design had been developed some time before the establishment of this project.

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[21] Interview Cindy Stoller 16 January 2014, Pypsonderwater farm
[22] Interview Josh Petersen, 25 February 2015, Pypsonderwater farm
[23] Interview Steve Jones 27 February 2014, Swellendam

Josh Petersen moved there in the first year of occupation, in 1999, with his partner. Initially he was mostly alone, with Barnes coming "in and out", and Collier coming to live at the farm after about three-and-a-half years. Others would visit intermittently. Petersen said that the first thing they did was to fix the windmill. He said that he welded, panelbeated, procured pipes and a new pump. He fixed the small cement reservoir at the windmill, and pumped water down to a small building at the southern end of the farm where he was living (which is now referred to as "the backpackers", where course participants, visitors and volunteers were able to stay in exchange for a small for or their labour contributions), a second reservoir uphill (now next to Collier's house), and the "main house" at the top of the hill. "We got a 1000 litres a day. That was for the household and a productive garden … We grew gardens at the backpackers. You do like you would anywhere – you make a garden" he said. Work on the land began, as well as work on a constitution.

Smith described the early days at Pypsonderwater as "very *ad-hoc*" with "no integrated design": "We didn't all know each other. We put money in ... We scraped together R10 000 each. It seemed like a good idea." At that time, most members did not live on the farm. "I wasn't practising permaculture per se," added Smith, "It was to create a sustainable existence, and people with similar values, take care of the environment, reduce our footprint, I realised later were strong permaculture values. I'd read and done the course, but it became more meaningful as time passed."

Barnes recalled, "We were young, with rosy dreams. It was exciting, people had different ideas and were very idealistic. From the first, few people lived there for very long. It is very hard on the ground and to make a living. You had to leave to make money, but it was not full time working for money. This might change. It has evolved a lot since about 1998. From no running water, no hot water for the first two years. It was rough. There was basically only the main house. I stayed in a tent for a while, just checking it out. I had seasonal work. I had bought a share, and eventually built a small hut. I started the foundations of my dream house".

Sarah Cross[24] remembered the atmosphere then as fun and happy, saying that people would get together for dinners and parties at the main house. At that stage members were able to stay in the house once it was fixed, if they did not yet have an abode. There was a diversity of participants, with a range of artists and musicians as well as permaculture practitioners. While permaculture was to form the organisational structure or approach of the farm, it was not envisioned initially as a strictly permaculture training centre, according to Cross.

Participants in the AZPI

The people who were involved in this project and its realisation that I interviewed included current members at the time of writing, ex-members, farm labourers and volunteers. The members on average in their mid-40s when I interviewed them. Most had attended university, and had been in some way involved in permaculture before coming to Pypsonderwater. One amongst the group of shareholders would be classified as "coloured", the remainder "white".

These included Kevin Collier, who had been involved at a number of sites where permaculture was being experimented with in South Africa in the early 1990s. He moved to Pypsonderwater in 2002, and was then able to design his own home and production systems from the beginning, according to permaculture principles. Prior to that, he had mostly retrofitted and redesigned around existing systems and infrastructure. At the time of field work, he was living with his wife and daughter on the farm, and making a living consulting in permaculture design and providing training in permaculture both on and off the farm.

Doug Cross[25] and his wife Sarah, both in their early 40s, were some of the first members of Pypsonderwater. Doug was a paleontologist and taught this and evolutionary biology. Sarah made natural medicines and ran a craft shop from their home in the Eastern Cape. Cross had met Collier at Rhodes University, and they went on to establish the gardens in KZN where the idea was born to seek land for a

[24] Interview Sarah Cross 21 April 2014, Eastern Cape
[25] Interview Doug Cross 21 April 2014, Eastern Cape

community of people to live on together and practise permaculture. Cross had spent time in the area growing up. He said that he had an affinity for the ecology and landscape where Pypsonderwater was located, which was partly his attraction to the land, although he had been invited to join other communities – at Rustler's Valley, in Clarens and Byrne Valley.

Scott Barnes[26] (41) had met Collier and Cross at Rhodes University where he studied botany and economics, and it was through Collier that he learnt about permaculture. After leaving university he lived at a Catholic Monastery with a partner in KwaZulu-Natal in 1996, where they rented gardens and sold the produce from there. At the time he worked at a herb nursery near to where Collier was living. Soon after, he left the monastery to join Cross at the KZN project, and they were the first two of the group to live there. He said, "I was depressed about the state of the world. It was the first sensible solution I came across. But it became the vehicle for other realisations that led me here. I'm still part of the solution, though I'm not doing permaculture per se"

Josh Petersen[27] (42) was amongst the first members of the AZPI. He had met Scott Barnes at Rhodes University in Grahamstown where they were both studying economics. While he was living in Knysna, and working and practising permaculture with the group there, he said that they heard that the KZN crew were looking for land, and joined them before they actively began their search. Petersen said that he was already living outside the town on a farm, growing vegetables with his partner, but wanted to be "more in the sticks". He said, "I liked and knew the people who joined Pypsonderwater. I had a dream of living in community since high school. A group is always stronger, there's power in community". He told me that when he joined the project, he knew he would be there for good and see the process through.

Nina Oakfield[28], in her early 40s, was also one of the first AZPI members. She had been involved at the KZN project and took a PDC at Rustler's Valley with Stoller and Grandin. Her sister had been involved with Petersen, and she was part of the group

[26] Interview Scott Barnes 28 January 2014, Knysna
[27] Interview Josh Petersen 25 February 2015, Pypsonderwater farm
[28] Interview Nina Oakfield 20 April 2014

who decided to seek land together. She had also lived at the Byrne Valley community in KZN for a period. Her educational background was in fine arts and Waldorf education. Her sister was also a member of the AZPI, and Nina would visit but did not live there.

Roger Duncan (early 40s), had studied journalism at Rhodes University with Collier and met the others mentioned before, and was involved at the KZN project. He was amongst the first to buy into the AZPI, but had spent little time on the farm itself while he was in Taiwan teaching English. He was studying to be a chef, in the hopes of being able to make a living from the farm, and live there permanently. He would spend time intermittently on the farm, usually staying in his small wooden hut or taking care of other members' homesteads if they were away.

Steve Jones[29], a qualified horticulturist, (early 40s) was one of the earlier members of the AZPI. He had worked with Petersen and Barnes at the pizza restaurant in Knysna, and became involved with Barnes's permaculture work in the area, where he was offering permaculture courses. He said, “I got swept up in it, it seemed so sensible. It is the infallible truth of how nature works, and good design principles”. He had incidentally been present at the project's first meeting when the farm had just been bought, and they were creating a constitution and a mission statement. Jones joined the following year, saying, “It was very idealistic, there were many people’s dreams. It was amazing to see that place.”

He had been looking for work in the green industry, but was unable to find any in the formal sector. Getting involved at Pypsonderwater, he had hoped to generate a business from farm produce, such as health bars or oils. However, he did not stay. When I met with him, he was growing vegetables in Swellendam and trying to establish the Peer Guarantee System[30] (PGS) in the area.

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[29] Interview Steve Jones 27 February 2014, Swellendam

30 "Participatory Guarantee Systems (PGS) are locally focused quality assurance systems. They certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange" (Organics International n.d.: Online)

Anna van der Zandt[31] met Scott Barnes working at a restaurant together, also in Knysna. He told her stories about staying at Pypsonderwater farm, and of glasses of water being frozen solid in winter. He invited Van der Zandt and her partner to visit the farm. After an initial visit, they returned to do the first PDC, although Van der Zandt didn't really know what it was. Barnes had told her it would be beneficial, and that she would get along with one of the extant members at the time[32]. She volunteered for a week before the course, describing the place as "wild and rough". She said, "I met people that spoke the same language. I finally felt I could fit in. I felt like finally I could get away. I never liked it in the city.

Van der Zandt and her partner applied the next year for membership. Three years later she moved to the farm, and on that day their relationship came to an end. Before leaving Knysna, however, she worked in the restaurant industry and saved money to move to the farm. Prior to that, she had lived in London, working at a high-end hair salon and in catering. She also traded at Knysna markets and festivals around the country. But van der Zandt was not fond of the work that she had been doing, saying that "I didn't want to be part of that mentality and the world out there, especially in Knysna, where the people we worked for were the elite of the planet. They walk around the planet like we would walk around here. Those kinds of people … Like in London - where do you get away?"

Graham Farrier[33], (in his early 40s), became involved at Pypsonderwater through the Cape Town contingent, and was involved there from 1999 until 2004. Farrier had studied drama, and worked in the movie industry. He had some experience gardening as he grew up. He would visit the farm for a few weeks at a time and on weekends, and assist with communal work such as digging gabions[34], fixing roads and making swales[35]. However, he was not sure that he had planned to live there. He said, "I loved the beauty of the land and a lot of the people there ... most of the people. We had great parties and good times". He said, "I saw it, I liked the look of it, and it was an

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31 Interview Anna van der Zandt 7 January 2014, Pypsonderwater farm

32 One of the Knysna contingent

33 Interview Graham Farrier 17 March 2014, Cape Town

34 Gabions are wire baskets filled with rocks, and placed strategically to manage erosion along waterways or roads

35 Swales are long ditches that are dug either on or slightly off-contour, with the excavated soil mounded just below the ditches

interesting thing to do. I had spare cash, I always wanted to be part of a farm." He exited the project in the late 2000s.

Gareth Smith[36], 47, was an actor and acting coach, and also one of the founding members of the AZPI. He had been gardening since he was 14 or 15, and he took his first PDC in 1992 at Rustler's Valley after learning about it from his wife-to-be who had been at university with Collier. He said that Collier was looking for people interested in procuring land together. He said that the group was "friends with like minds. We hadn't prescribed to a particular ethos." Gareth and his partner at that stage bought shares together, but did not develop the plot before she left. Smith said, "From the beginning there was a slightly conspiratorial feeling, you couldn't tell people things. It was a bit secretive, people felt on the fringes, for fear of being closed down."

Jessica Fourie[37] (40), Smith's wife at the time of writing, was also a member. She worked in writing and directing for theatre. She had been visiting the area where Pypsonderwater was located for the last 25 years. Since then she had wanted to live in the area and build her own house. She said that she bumped into some of the members in the area, and was invited to a New Year's Eve party. She recalled, "It was quite strange in the dark. We'd received them for tea already. I walked that night and really liked it. It was my love for nature and the landscape before permaculture". Incidentally she had met Smith on a job in Johannesburg, and he invited her to visit the farm, although she was unaware that it was the same place that she had visited before. She said, "After we got together, we came here to recover after a production. I felt I wanted to be a part of it too. I came to visit and realised that. The permaculture was secondary but I love plants. My grandpa grew vegetables". Fourie bought a share in the company.

David Howitzer[38] (58) was also an original AZPI member, and was involved there from 1999-2011. He had learnt about permaculture when he was working at Thlolego

[36] Interview Gareth Smith 14 April 2015, Pypsonderwater farm
[37] Interview Jessica Fourie 14 April 2015, Pypsonderwater farm
[38] Interview David Howitzer 24 March 2014, Cape Town

ecovillage[39] in the North-West Province of South Africa. It was here that he had met Collier for the first time. He said, "I started out with permaculture and began to focus on sustainable food production and that grew into sustainable building and things like ecological sanitation, energy efficiency and natural building materials". He said that he had always loved nature, and had been influenced by a visit to Europe in the 1980s. He said, "The green movement was in full swing. As a South African, South Africa was isolated. It was an eye opener to be exposed to environmental issues and activism. It was a huge influence, I became aware of environmental and sustainability issues, and these influenced and shaped my consciousness and built on my love for nature". Howitzer's background, however, was in psychology and he had worked as a journalist, but he had become tired of it with the volatile political situation in South Africa in the early 90s, and had become fed up with politics: "I decided to explore a different lifestyle closer to the land. It was a deep wish. Instead of towns, cities and the office". He had taken permaculture courses at various locations around South Africa in the 1990s.

He joined the Pypsonderwater project for two reasons. The first was that it fulfilled a long-term wish of his to own land in the countryside where he could grow food and be "close to nature". He didn't have the resources to buy alone. He felt that small-scale farming suited him. Second, he had a longing to live in a community of like-minded people. He explained, "I increasingly felt alienated from the city and suburban lifestyle and at the time, re-evaluated my own spirituality: a new approach and lifestyle began to interest me. These elements fell into place, and it felt right. I especially sensed in most of the people a journey and was seeking a meaningful spiritual life beyond a materialist consumption driven life. These elements I felt were lacking and could be addressed in community."

Cindy Stoller[40] (45) joined the AZPI in 2006 with her partner, Piet Boom. She had attended a PDC at Fambidzanai, and was involved at Rustler's Valley as well. She worked teaching food production and permaculture in various organisations, and worked as a permaculture facilitator. She had met Collier at Rustler's Valley, and

39 Referred to in Chapter 5, an ecovillage and site where permaculture was introduced, taught and practised in its early inception into South Africa.

40 Interview Cindy Stoller 20 February 2014, Pypsonderwater farm

when they met years later at a permaculture convergence in George in 2004, he invited her to visit Pypsonderwater. She said that she was astounded by the beauty of the area, and would visit often. At the time, the project was looking for members after a wave of exits. She said that it made sense for her to be there because it put her in a good position for training, and felt that her experience would benefit the farm and the students there, and because she would be with like-minded people. She and Boom proceeded to build a house there. At the time of writing, she made most of her income from facilitating PDCs, and mentoring and writing training materials, although she made a small income from selling heritage seed which she grew. She had just begun teaching courses in Spain at a permaculture centre run by an ex-student, with a colleague she had met at the International Permaculture Convergence in Malawi in 2006.

Stoller's partner, Piet Boom[41] (36) first heard about permaculture around 1998 when he in Wilderness from people who were practising there. After meeting Stoller , he got involved with the permaculture project she had begun in a sub-economic suburb in George. Food production was not new to Boom. He grew up visiting and working on farms during school holidays, and got an understanding of mixed farming practices then. He said that at home his family grew vegetables and kept small livestock. For Boom, permaculture made sense because of the changes he had observed, both in farming practices and in ecologies he lived in.

Tina Scheepers[42] (30) arrived at Pypsonderwater as an anthropology student. She was interested in notions of belonging and had sought out intentional communities where she could research this theme. She lived on the farm for six weeks doing fieldwork, became involved with one of the members and soon returned to live on the farm, and take the PDC in 2012. For Scheepers, her relationship was an important dimension of deciding to live on the farm and participate in the project, although she was not a shareholder, but also important for her was the physical location and experience in the community.

[41] Interview Piet Boom, 17 February 2014, Pypsonderwater farm
[42] Interview Tina Scheepers 25 March 2015, Pypsonderwater farm

Zeke Hewitt[43] (43) joined Pypsonderwater later on in its development. His professional background was in graphic design and landscaping. He had first encountered permaculture in England in 1997 at Glastonbury festival. He remembered, "I heard the word but I didn't know what it was. I saw a sign for permaculture, a permanent garden ... I checked it out and chatted with the guy there. I thought it was alternative technology. It made sense to me. I did the PDC in 1997. It was close to where I lived and it was affordable. There were also travellers living in the woods. There was a loose permaculture project, and Mike Finegold, one of the early, and quite old now, permaculture teachers in the UK. It was very inspirational. It changed my life. It gave me a totally different perspective on life, food, products. It was very exciting. I got involved in that farm or project. I made two of my best friends on that course. They also moved to the project. We ran sweat lodges, and led to an apprenticeship with a Native American".

When he moved to Cape Town, he said that he didn't know anyone, so enrolled on a PDC. Here he made good friends, including Cindy Stoller, and learnt about doing permaculture in an African context. He stayed in touch with Cindy, who was working on the permaculture centre in George at the time. When she got involved at Pypsonderwater, she told Hewitt about it. He said, "I got very excited about it. I fall in love with people more than the places, or the thing. It is important, the human connection, doing things with people he loves. This is a driving factor … I liked the land a lot … It was a lot about escapism and getting away from consumer controlled lives in the cities. It was a nice idea to be on a farm, it seems like a good antidote. It is good for me, doing physical work. It's not just sitting on the stoep, I'm not under that illusion." He and his partner bought a share for R22 000, thinking they could move between city and farm, and decided to try it out.

Howard Stone[44] (41), a tour guide and environmental educator, had previously been a member of the AZPI but was no longer involved at the time of the interview. He had worked with Collier on a biochar project in the Eastern Cape. At that stage Stone was involved with an ecovillage in the Eastern Cape, where tourist activities were offered, and he worked on alien plant management. Two of the participants there had attended

[43] Interview Zeke Hewitt 15 March 2015, Cape Town
[44] Interview Howard Stone 11 April 2014, Eastern Cape

a PDC. Stone said, “I felt I needed something critical. I realised my operation was not sustainable, and that people close to me did not agree with me and they had gained knowledge on the PDC. They’ve got something I don’t understand.” After doing a PDC at Pypsonderwater, he bought membership for R45 000[45], and would visit the farm for a week or two at a time, assisting with farm chores. He moved to the farm in 2011, and lived in a tent. He set about monitoring and observing his site, planning and clearing. Stone exited the project in 2013 after being requested to leave having reneged on his fiscal duties. He went on to work in ecotourism in the Eastern Cape, and host permaculture workshops.

Mike Hutchings[46] (38) was a member of the Pypsonderwater project for a brief period. He had come there via Stoller and Boom, with whom he had learnt about permaculture via natural building work. Although he had prior construction experience, working there was his first encounter with natural building. He said, “ It wasn’t always the plan to be on the land. I wanted exposure to an alternative lifestyle and operate outside of the paradigm of the commercial world … Permaculture sparked my interest”. He did the PDC at Pypsonderwater in 2007 or 2008.

Josie Cartwright[47] (32) came to Pypsonderwater first with a boyfriend, who had introduced her to permaculture through Mollison's manual. They visited over the New Year. She said, “It was crazy but I loved it”. Five years later she got involved with one of the shareholders, and returned to the farm and “met the permaculture family”. At first she shared a membership with her partner when they bought together in 2007, and in 2010 she bought a full membership in the AZPI. She said when she arrived at the farm, “I loved Pypsonderwater first. I began to understand more [about permaculture], and became a member here and did a PDC … it felt like home. It is a feeling I still get, even though I don’t live here. Like belonging somewhere where there is a vision for improving the lot of humanity and integrating humans and nature”. She had numerous farmers in her ancestry, and living on the land was not unfamiliar to her. Josie did not live on the farm, and nor had she built a home there.

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45 By this stage, the farm's value had increased on the property market since it was first bought by this group, and share prices had risen accordingly.

46 Interview Mike Hutchings 13 April 2014, Eastern Cape

47 Interview Josie Cartwright 3 January 2015, Pypsonderwater farm

Dirk Henks[48] (45) was a Dutch man who had become involved at Pypsonderwater through a friend of his who was a shareholder there at a time when the project was seeking new members. He became a member in 2010. Previously a fashion designer in Amsterdam, he was providing breathing therapies at the time of the research. Henks built a house on the farm, but spent time providing his services between South Africa, Holland, Turkey and India. He decided to join the initiative because he wanted a place where he could live without having to make money, and to retreat and "move away from civilisation … I wasn't here to practice permaculture". He also wanted to have a home that belonged to him rather than paying rent. He explained, "The way I was living did not feel natural - a consuming lifestyle, in Europe and in South Africa. To not move around, to be present ... For the spiritual journey. I unconsciously knew this was a good deal. I didn't know anything about sustainability or permaculture ... The contrast between Amsterdam and South Africa - they are extremes that don't match. In permaculture, we conserve resources, in the city you consume."

Igshaan Davids[49] (31) had joined the AZPI in 2010. He grew up between a small agricultural village near Cape Town where his grandfather had a small-holding. It was an area confined to "coloured" occupation under apartheid. He said, "my oupa had fruit orchards and plums, and I was involved in their maintenance - pruning, harvesting, sorting. We sold the fruit at the Epping market. My oupa was a teacher, and so is my father. I grew up on the border of the ghettos in Paarl, which was a contrast to Pniel. I was moving between these spaces. It was good to be in the ghettos, to see both sides of life. The wealthy, versus the suffering in the ghetto. You get the best love in the ghettos, wealthy people don't understand this. Where things came up to teach, to know who I know and my privileges, and to take these to the ghetto".

He learnt about permaculture through a couple he lived with in McGregor, a farming town in the Western Cape province. He was doing a one year apprenticeship in organic farming there, although he had studied mechanical engineering and horticulture. He had also worked at a biodynamic[50] farm, Bloublommetjieskloof, for

[48] Interview Dirk Henks 10 December 2014, Pypsonderwater farm
[49] Interview Igshaan Davids 9 December 2014, Pypsonderwater farm
[50] The biodynamic farming method was developed by anthroposophist Rudolf Steiner. The philosophy sees the farm as an organism, and cattle as central to farming pursuits because they provide fertility for the farm. It is an organic practice, and makes use of astrology and a number of "preparations" to bring

one and a half years, where he undertook training in biodynamics. He had further experience in agricultural marketing. He became involved at Spier, another biodynamic farm near Cape Town, where he met Avice Hindmarch, and rekindled his interest in permaculture. He went on to take a PDC at Pypsonderwater soon after. He told me, "the philosophy was pre-existing. I was inducting into the philosophy of healing the earth and surplus share. Permaculture motivated me, and was an anchoring point that you can scrutinise biodynamics with, which is difficult to understand. But permaculture is easy. You can draw on a piece of paper, but it is not acceptable to everyone. Permaculture brought things out more, deeper insight through observation". He had met Collier in Cape Town at a Sufi gathering (they were both practising Sufis), and began volunteering at the farm. He was interested in joining, and asked if shares were available. I asked Davids why he had joined the project and what he felt the importance of their activities there were, and he said,

> I joined because this is the cause. It is what this community stands for. Even if we were all black, it would be the same cause, I'd be here. I relate to the vision. It is a tool and is a scarce commodity. It is the tool of knowing how to grow, how to read systems and maximise them. This will be a vital thing in the future. We practice what other people do not see as vital, but if there is 10% of people on the farm or people in sustainable development … Without the 10%, the other 80% won't wake up. This is important for the future, we need to save the earth, and look after our only home. We're doing things seriously wrong. It is not the way it should be ... Being part of this community how I benefit most is to set an example for others who are not white. It sounds political but it is not. [To] save the earth is seen as a white thing. By being part of this community I can show others that it is not a colour thing, don't get put off if you are a different colour or culture. It is a bigger thing we need to look after.

Leela Solomons[51] (36) joined the AZPI around 2009. She had studied marketing and business science at university, and also did chef's training, and combined them to start a new business teaching people about organic and healthy food. On one of these

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life to the soil. While it does not focus explicitly on design, it sees the farm as a unit within which the resources necessary for farming should,d ideally be produced.

[51] Interview Leela Solomons 11 January 2014, Pypsonderwater farm

courses, a student told her about Pypsonderwater and recommended the PDC because it focused on food production. She had never heard of permaculture before then, and just booked the course without researching it much. She said that her life shifted when she decided to buy a farm. She said that she needed a starting point from which to operate on her farm. On the course, she met Collier and they later got involved and then married. She bought a membership in the AZPI after she did the PDC, and was taken by the concept of living community, which was something new to her. She had previously preferred to work alone before she moved to the farm.

Interviews with members and ex-members of the AZPI revealed that the majority of shareholders were in their early 40s, with a number of the newer members in their early 30s for the most part. The early members joined in their late 20s and early 30s, and many of them had been involved in food production and other permaculture projects – like Rustler's Valley, Byrne Valley, Thlolego and Khula Dhamma - and food production prior to joining the AZPI. A number had no prior experience in either food production or permaculture, but had developed that knowledge and interest through their engagement with the project. Many professed a love for the landscape, a desire to get away from city life and what it represented to them, to bring about better ecological practice in the face of ecological deterioration, and to realise spiritual goals associated with being closer to nature. Others joined to support the acquisition of the land, and to be able to access it, but did not necessarily join because of a prior interest in permaculture. All but one member would be classified as white under apartheid classifications that remained relevant at the time of writing, in terms of state policy and the constitution of South African society. Most of these members explained that their involvement was born of a desire to commune with like-minded people who shared an inclination to build community, live on the land and take care of the environment, and share this learning with others. Their motivations and their goals bear a close resemblance to the sorts of themes and ideals generated from within the counter-cultural movement in Western nations of the sixties and seventies that permaculture thinking and practice emerged with, as explored earlier. For some, it represented a way to create an alternative to the western industrial life associated with cities and ecological degradation. Permaculture, and the establishment of a community of practice “in nature” - a derelict farm in a socially and geographically

marginal area – also came to be seen as a way for creating an alternative to the authoritarian, white apartheid system and a conduit for freedom.

The permaculture project was made up of a designated group of shareholders who tried to bring their various ideals and desires into being. The people involved in the project were not limited to membership, however. Three "coloured" labourers were employed on the farm as well – Piet September[52] (42), Stefan Pretorius[53] (29) and Dawie Cilliers[54] (35). All three labourers lived on a farm in a neighbouring valley, and would commute on their bicycles daily to work at Pypsonderwater, and had previously worked on fruit farms in the area. They were not included in the membership, and were paid to work on individual sites and on general farm tasks.

Others who came through the project were PDC participants and volunteers. The majority of these were "white", middle-class people seeking to learn techniques for growing food, as well as direction in their lives. Many returned to learn and assist in various activities engaged in on the farm.

In the following sections, I set out the membership structure on the farm, and describe how the permaculture theories and ideals were enacted here.

Social Organisation: The establishment of a constitution, rights, rules and obligations

Legally, this permaculture initiative was established as a Not-for-Profit Organisation (NPO) and Section 21 company named the Arid Zone Permaculture Initiative (AZPI). It was this legal entity that owned the land and farm assets. Effectively, the individuals that got involved bought membership in the NPO. Membership in the AZPI gave them land use and building rights, and a constitution governed their activities. These rights and obligations shifted as needs changed, and as the company's constitution was refined. Moreover, new companies laws were introduced at the time of writing and the Memorandum of Intent (MOI) had apparently to be distilled into a simpler form, and oriented less specifically to rules that suited individuals. However, I

[52] Interview Piet September 21 February 2014, Pypsonderwater farm
[53] Interview Stefan Pretorius 21 February 2014, Pypsonderwater farm
[54] Interview Dawie Cilliers 21 February 2014, Pypsonderwater farm

attend only here to the governance structures and their legal dimensions which were in effect during the period that I conducted the research.

The adoption of a Section 21 Company structure allowed the farm and its assets to be owned by the company, and the individuals to be its members or shareholders – or Land Custodians, as they called themselves. Stoller explained that this meant that the land could not be taken away from the members, and they would be able to own it together as a group. This legal structure then fell under the Section 21 of Companies Act 61 of 1973 of South Africa, which made provision for "associations not for gain" - which included trusts, voluntary associations and the not-for-profit Section 21 companies.

This kind of not-for-profit organisation is by legal definition "private, non-government with self-governing boards accountable to their owners or members" (ETU n.d.: Online) and is registered on the government registry. Registration includes the submission of founding documents, and requires the creation of organisational structures of the company to conform with the regulatory requirements of the law.

The company must have a lawful objective that promotes, religion, art, science, education, charity, social activities or a communal or group interest in terms of the 1973 Companies Law. The company's legal structure has two tiers: one made up of the members or shareholders, and the other by the directors. The founding documents include the memorandum and articles of association. These documents and statements set out legally the organisation's aims and business, powers, governance structure, procedures, meetings, financial management, conduct of office bearers and indemnities. The law further sets out requirements for auditing, registration, the keeping of membership and directorship registers, attendance registers and minutes; the holding of annual general meetings (AGMs), submission of accounts and presentation of directors reports at AGMs (ETU n.d.: Online). The company must have at least seven members, and these members do not derive shares or dividends from income generated under the company (ETU n.d.: Online).

It would seem that by choosing this legal structure within which to promote permaculture practice and also realise some of their personal ideals, the group had to

structure their social organisation around this legal entity. They were required to codify their aims and activities, and select members to carry out the legal duties required by the state when they registered the NPO. Directors were voted in, and other posts not required in the law were established to see that the legal requirements were met, such as a treasurer and secretary. The memorandum of incorporation and articles of association that constitute the founding documents and are required for the registration of a Section 21 set out the rules, rights and responsibilities of members and directors.

The group had begun to hold meetings to develop their constitution from about 2004. The constitution which governed the affairs of the AZPI and the management of the farm was finally approved and accepted by the members in 2011. It was during this process of codification that the venture became termed a permaculture project, according to Smith. The constitution took shape over the following few years, and was completed in 2007.

Smith explained that different ideas were tabled as to how to go about developing rules, rights, responsibilities and so forth. Smith and his partner had put forward a proposal to start without any rules and develop protocols as issues arose. However, there were fears expressed by some, apparently, about things becoming to anarchic, and the group agreed and instead chose an approach where “we had a mass of inputs that we refined” whereby “any rule that someone wanted was entertained. Over the years they were either discarded or retained and then entered into the constitution when it was written or into the rules and regulations document. There were heaps of rules in the beginning”.

Stoller explained that the AZPI members chose a Section 21 structure because at the time it seemed to be the safest means of land ownership. This legal structure, which allowed individuals to buy membership in the company, allowed them to access land which they may otherwise not have been able to afford alone. Moreover, it was established with an explicit intention not to be profit-oriented, particularly in terms of private land ownership and profiteering from the property market. This meant the members could not sell the company's assets – the land or infrastructure - on the open market. They could only be bought by or donated to another Section 21 company with

similar aims, and the whole farm would need to be sold along with its assets. If a member wished to leave the project, they were able to sell their house (if they had one) for the material and labour costs incurred in its construction, and to sell their share. Stoller explained, “it is a system of custodianship, not ownership”. Yet, as shall become clearer in the course of this dissertation, the land tenure system operated under a system of private ownership. The disjunctures between the group’s ideals of communal land management and that system of tenure under South African law provided many challenges to those ideals.

The rules and regulations, it appears, along with the constitution, were developed in line with the creation of the Section 21 as a vehicle for education in sustainable living based on permaculture principles. The governance and legal structure of this organisation, then, was shaped by the legal structure or entity that was chosen by the group as a way to access land and share it. It required there to be a particular aim for the organisation, and permaculture and education in sustainable practice was what was chosen. Another range of principles and prescriptions alongside those which were legal, were also introduced into the statements of intention produced in this organisation.

The vision of the AZPI was stated in the constitution: “We are here to create a responsible, supportive, free and harmonious community and training environment. We are committed to investing our community and resources in developing educational models, rooted in permaculture ethics and principles. Our lifestyles will reflect the dynamic ethics and principles of Permaculture to make conscious our connection to Spirit and Earth and our interdependence with the web of all life”.

Stoller explained, “It is a training centre, and all activities must reflect permaculture and sustainability, including lifestyle and consumer choices. It is a training centre because members believe that the only way to teach about sustainable living is to model it. What is the point of teaching theoretically? The purpose of having this training centre is to empower people to be change and to deal with environmental disasters as an entire human race.”

Over the years, a number of people had passed through this project. Many of those who had become involved in this project had some involvement with permaculture elsewhere. As had been indicated to me, however, not all who had initially joined the project were explicitly only interested in the establishment of a permaculture training centre *per se*. The adoption of this legal vehicle for accessing land, it seemed, required the group to focus the aims of the project, and to do so within the structure of the law. The activities and participants who remained in the project seemed to coalesce around the practice of permaculture.

The founding documents developed for legal registration described the project as having an explicit intention to develop models for ecologically sound and sustainable environmental management in a drylands environment using permaculture principles and ethics, and explicitly emphasised the connections between their own life ways and the wider ecology, or "web of life". The broader aim was to generate "with spirit a wise, just and sustainable culture in balance with the natural world, to serve as a living example; manifesting a spiritual ecology in our daily lives."

The ethics, guidelines and rights outlined in this constitution were not only pragmatic, but idealistic as well. The rights included those to "freedom of choice, expression and lifestyle providing they adhere to the conditions of the constitution" where co-operation – reflecting permaculture's ecological philosophy - was presented as "the fundamental model for human endeavour".

These rights enshrined in the organisation's constitution appeared on the one hand to be aimed at bringing about a form of freedom in choices around lifestyle, but were bound by the constitution to follow particular rules and regulations. Freedom was to be achieved through adherence to particular strictures. These quite specific regulations are outlined below.

Management Structure

The Executive Committee, constituted only by full members, was responsible for planning and managing activities and affairs of the company, in line with its constitution, and for making decisions over these matters. The Management

Committee, also constituted only by full members, was responsible for managing the farm affairs. Issues would be raised and decisions taken at four general meetings each year, and at an annual general meeting. The general meetings were held to discuss and make decisions around the implementation of projects and campaigns of the company, financial statements, and the appointment of new members. The annual general meeting dealt with the approval of planned projects and campaigns, the development and approval of forthcoming annual budgets, changes to the constitution and methods of operation. Roles included in this committee were the two directorships, secretary, treasurer and farm manager. These roles could be rotated amongst members, but tended to remain with the same individuals over time, barring perhaps the secretary and treasurer.

Decisions at general meetings were made through consensus, with a minimum of 50% plus one person of the total number of members present. The consensus decision-making approach was based on the principle that "if nobody raises a reasoned and paramount objection against such decisions, consensus is reached". The group had further adopted "Holacracy" as a decision-making framework. Stoller explained that Holacracy provided a more structured way of communicating and ensuring that all parties voices were heard. She explained,

> With consensus decision-making, not all voices get heard, and we couldn't always reach consensus. Decisions would just get made without consensus, or no decisions would be made … Holacracy is an administrative process, where the tensions are felt by all if they are expressed by one. Proposals are given to solve tensions, versus presenting complaints. It is a very structured process, where all people get heard. It is stage 3 of an integrated decisions making process. The proposal is held by the group, not just individuals. The proposal is modified with inputs, and serves the good of the whole. We have 4 general meetings a year, where certain decisions can be made for now, and modified later. With Holacracy, people need to engage and trust and go beyond the fear of not being heard or misunderstood. Once they have communicated their "issue" they don't speak again until it is their turn. One of the community processes is that you make a proposal if you table a complaint. There is the

understanding that if you have an issue, it is often likely that the others will feel it too. In permaculture, the problem is the solution.

In terms of the constitution, however, where consensus or agreement was not reached, the Executive Committee reserved the right to call for a vote. Such decisions included changes to the rules, regulations and the constitution and acceptance of new members. Furthermore, in the case of extreme differences of opinion between members, the Executive Committee would be called upon to resolve conflict or take decisions on disciplinary action in the case of a breach of rules or the constitution.

Rules and Membership

The rules established by the members of the AZPI set out the permitted activities for visitors and members on the farm. They included prohibitions against violence, the removal of flora, fauna or archaeological artefacts, and the use of foul language before minors. They governed the use of communal resources and attendance at meetings, and demanded that visitors and members reduce use of fossil fuels and remove inorganic waste from the farm. The rules also governed the use of building materials. For example, corrugated iron had to be painted to reduce glare. This rule was put in place in response to planning and building regulations. The use of gutters, water catchment tanks, and dams had to be prioritised in planning. They also related to environmental management, such as placing limitations of keeping and grazing of domestic animals.

Membership could be attained through an application process, and the constitution clarified that it this application process should "entail allowing people to join only on the basis of merit, competence, and the degree to which their values, ethics, character and behaviour are in line with the AZPI and its constitution." Once a potential member submitted their application form - which requested information about an applicant's existing skills and permaculture background, intentions for living in the community and on the farm, spiritual life, life experiences and social values – it would be voted upon by the Executive Committee of the company. Membership of the group, as indicated above, was predominantly "white" middle-class people with

an ostensibly anti-authoritarian bent, who were to some extent seeking to actualise the utopian ideals of freedom and liberty through integrating with nature. There had, apparently, been extensive discussions around racial inclusivity, and whether to include a clause in the membership documents that membership had to be racially representative. However, it was decided that the constitution was not based on race, and this did not happen. The group had hoped that it would be more inclusive, and that people other than "whites" would be interested in joining the initiative. The group had also discussed how to include the farm labourers in the project, but I was told that the zoning restrictions which placed limits on the number of residences that were allowed on the farm meant that there was not enough space for the labourers in terms of the law, let alone the existing members who had bought shares in the company. I elaborate on the complications of municipal zoning restrictions further on.

As shall be shown, certain incongruencies between the notions of freedom and anti-authoritarianism sought in the establishment of this permaculture project, and its actual enactment would emerge – in particular with regards to the way that the non-shareholding labourers were engaged with in relation to the members and realisation of their ideals, and the adoption of particular legal frameworks as vehicles for land ownership.

In order to become a member of the AZPI, an individual could apply for membership, and upon acceptance buy a share in the Section 21 company. Three levels of membership were available: full, casual and honorary. Full membership was open to people over the age of 18 who had been vetted by the Executive Committee of the AZPI, and allowed members access to the resources of the company and the farm, but provided no claim to any material assets owned by the company – including the land. Full membership entitled members to become land custodians (LC's) "forming Land Custodianships" on "Land Custodial Sites" (LCS's) in terms of the constitution.

A Land Custodian was considered a legal entity "made up of Full Members who have paid a Land Custodianship Fee". More than one Full Member could constitute a Land Custodian – that is, two Full Members could hold one Land Custodianship. All fixed assets were owned by the company, and the LC's were considered custodians of those assets. Fixed assets were defined as "all components integral to the design and

function of LCS's". The property, Pypsonderwater farm, was separated into two categories – Category One (Community Land and Assets) and Category Two (LCS's and Assets). Community land and assets were those assets deemed communal, which all members could access. They were recorded on a topographic map and listed in an assets directory. They were to be communally managed and maintained. Such assets included, for example, all water sources, boreholes and streams on the farm, the roads, the dam, irrigation lines, and main house. LCS's and assets were areas designated for Land Custodian's use. These sites, limited initially to 21, were decided amongst the group, and delineated by natural borders such as ridges and valleys.

The Land Custodian Sites came with various rights and obligations. LC's were given the right to live on and develop their sites "as an educational model of applied Permaculture as a component of the greater Pypsonderwater education model". LCS's were categorised according to land-use suitability determined by the group and historical land use on the farm – Category One (Agricultural), Category Two (Wilderness) and Category Three (Co-housing). Each LC was responsible for developing and maintaining the LCS's accordingly. Agricultural sites were those areas that had been in agricultural use historically, and "ideally situated by virtue of their suitability to produce primary resources required to sustain the community and to act as training models for ecological agricultural production". Occupants of agricultural LC's were required to live permanently on the farm, and "develop towards ecological agricultural production". However, if no development occurred on such a site within three years of occupation, the company reserved the right to take back custodianship of such a site from the LC, making it available for new custodianship. Visitors were only allowed to enter LCS's with the permission of the LC.

Wilderness sites were those "located in the wilderness areas of the farm" which were designated on a topographical map. Wilderness was defined as "sensitive natural environments within which rare and endangered plant and animal species may be living" and not suitable for agricultural production. These were to be developed with the "least possible impact by virtue of their location and circumstances". On these sites, indigenous water-wise gardening and small seasonal kitchen gardens were permitted, rather than the broader scale production envisioned for the agricultural sites. Occupants of wilderness sites were allowed to cultivate further in communal areas.

The Co-housing sites were envisioned as multifunctional clusters of individual housing units with communal facilities such as kitchens and bathrooms.

What these arrangements meant was that the residents of the farm did not own the sites where they built their homes and lived, only the share in the company which granted them land use rights, which included the building of homes. Only additional developments, such as a house, could be owned by members. Their development was envisioned with a sensitivity to past land-use activities, and local ecological factors.

Each LC was allowed one vote in deciding matters at Executive Committee meetings, and was liable for paying levy payments and seeing to work obligations. The fee for Land Custodianship changed over time with inflation, with the initial fee having been R11 000, and this increased incrementally to the most recent sale of Land Custodianships valued at R45 000. The value of any development on an LCS which was to be transferred to a new full member would be negotiated between the outgoing and in-coming members, and the outgoing members appropriately reimbursed.

Casual membership – which included three categories that applied to volunteer workers, apprentices and learners, and affiliated members – granted such members use of "clearly defined communal resources … for the duration of their stay on the farm", but provided no rights to claims over assets or resources, nor decision making power.

Full membership allowed access to farm resources, and also made members liable for levies on three levels – "normal levy", "work levy" and "resident levy". These were paid to the company, and determined each year at the AGM. Failure to pay levies without mitigating circumstances could lead to the revocation of membership when levies amounted to 25% or more of the current value of each LCS for full members. The "normal levy" constituted a financial contribution. The "work levy" was a contribution of a minimum of 154 hours of labour a year to farm activities "on designated communal projects". This could be substituted with cash, the amount determined according to the value of twenty-two days of labour at current wages paid to labourers employed on the farm.

Labourers were paid initially above the minimum wage as set out by the Department of Agriculture. The minimum wage changed and the rates which the farm labourers were paid at the time of writing were equivalent to the minimum wage. Residents were further required to work one out of every seven days spent on the farm, or one hour for every working day for shorter stays. These levies could also be substituted with cash.

Labour reproduction on the farm, therefore, depended not only on codified labour contributions from members and visitors to the farm – mostly "white" people seeking to bring about an ideal of ecological and social harmony, through working with nature and practising a range of ecologically-oriented agricultural techniques. It also depended on labour drawn from "coloured" tenants on "white"-owned farms, who were the descendants of people dispossessed and exploited through colonialism and apartheid. These are dimensions of this project I will pick up on in the following chapter, because these dynamics introduced a fundamental contradiction between the utopian aims that this group of mostly "white" South Africans sought to achieve through the prism of permaculture, and the ways in which it was enacted in the landscape and social realm. I return to the management strategies employed in the project, which reveal another critical contradiction that emerged between the social-ecological ideals of the participants and the ways in which permaculture was put into practice at an institutional level – guided, in a large part by the legal framework employed by the project to achieve its aims, including land access. As shall be shown, and indicated above, what emerged was a considerably regulated and bureaucratic system for land management and household reproduction in spite of a professed desire to break away from authoritarian regimes and hierarchical governance systems. In part, this was a response to the legal requirements set forth in South African environmental and municipal law, but also represented a very particular interpretation of the quite loose and open principles that are claimed to be central in permaculture philosophy.

Development of the various categories of sites had to adhere to certain conditions according to the constitution. These governed building and agricultural production. For example, all buildings had to be built according to "sustainable building principles", and could not be built on an horizon or facing opposite a neighbour's

household view unless this was unavoidable. Plans for development had to be passed by the Executive Committee. All sites were to have access to domestic water, and were required to recycle their water. Agriculturally viable land had to be used for the production of plant or animal based resources, and if an LC wished to plant any species listed on the National Noxious Weeds species list they had to first ask permission at a Management Committee meeting.

Members were given the right to conduct business activities on the property, and use communal resources and LCS's in the process, upon negotiation with the Executive Committee and the ratification of a Memorandum of Understanding between the LC and the Executive Committee. If resources owned by the company were used for private business – such as teaching areas – they had to be rented from the AZPI, and a percentage of profits returned to the company. Financial records of private business had to be available for scrutiny by the Executive Committee. Any such business which contradicted the aims, objectives and ethics of the AZPI was not permitted.

The original constitution, and the rights and responsibilities of LC's, were compelled to change in light of changes to the zoning on the farm, and also in response to changes in the Company's Law Act of South Africa after the research was conducted. At the time of writing, the constitution was being amended and I do not provide details of these changes, except to say that under the original constitution, 21 land custodianships were available. This was revised in terms of municipal zoning ordinances which allowed only 13 permanent structures to be built for residence, and the constitution and membership had to be adapted. Consequently, only 13 Land Custodianships were finally available. This had implications for membership, which had started out at 21, the kinds of developments the members wished to make on the land, and the project's capacity to make provision for inclusion of farm labourers on the land. I provide an account of these changes in the next chapter.

The ideals and mandates of the AZPI set forth in the constitution were effected through broadscale land management strategies and homestead level design and implementation aimed at being appropriate to the local ecological and social context through permaculture design theory and philosophy. Decisions over these kinds of land use activities were governed by an institutional structure which was intended to

be inclusive and consensus-driven, and which established its own set of rights and regulations, and economic obligations. Below, I provide a description of the environment which the members of the AZPI occupied on Pypsonderwater farm, and the kinds of interventions made on that land to realise their permaculture ideals.

Working with Nature: Putting permaculture theory and ideology into practice

Pypsonderwater farm, which occupied 400 hectares of land, was located in an arid ecological zone, in the rain shadow of nearby mountains. The area had historically been settled by *trekboers* in the 1700s who were seeking grazing for their livestock, and later became a centre of ostrich farming that supplied the lucrative ostrich feather trade at the time (D'Arcy Thompson 1981: 45). Relics of the trekboer occupations – such as old grave sites and shooting stations – remained. The much deeper history of bushman occupation was evident in the scattered stone tools found on the farm.

Pypsonderwater farm had originally been part of a bigger farm that ran up the valley and had been divided into three properties – Mountainview, Midvalley and Pypsonderwater. A woman who grew up on the original farm, told me of its history. She said that before the farm was subdivided, apricots were grown at the top of the valley, in the middle of the farm (around Midvalley) were grains. Pypsonderwater farm itself was not farmed much, she said. She reckoned that the cattle might have grazed down there, and that people kept goats and sheep around their homes, but not many. The land was ploughed with horses until the 1960s, when tractors were introduced. She said that the tractors ploughed more deeply than the horses, and perhaps that was the cause of all the erosion on the land. She said that when she was a child, the river never ran dry, and there was a permanent wetland on the land. There were only windmills drawing water initially, but these were replaced with diesel pumps which only ran during the day. When electric pumps were brought in, they could run day and night, eventually draining the water table. She told me that when the AZPI bought the farm the river was dry, and “ons het nie gedink hulle sal dit maak nie” (“we didn't think they would make it”).

The land had not been grazed for the 7 years before this group bought it as a bankrupt stock farm. According to Petersen, there were virtually no grasses growing and the land was derelict and drought-ridden, and heavily eroded after the devastating Laingsburg flood of 1982. The river then flowed, according to Petersen's estimates, for about two weeks of the year. A photograph of Barnes's residence across a field reveals a rather bare landscape (*Fig. 2*) where one now finds a vast thicket of *Acacia karoos (Fig. 3)* "It was shockingly dry," said Petersen, "maybe because of the degraded environment".

The farm was bought with one functional fresh water borehole that was pumped by a diesel pump, and provided "barely enough for household water", according to Collier. There was a second windmill, a small dam, and an old canal system in place, which at that time was damaged, leaky and inoperational. It was later fixed by the shareholders. The group had found eleven boreholes on the farm but most were defunct or closed. They drilled four more , but they either had very little water or were brackish from the shale geology of the area.

The farm included a mosaic of biomes – the Muscadel Riverine, Albany Thicket, Western Gwarrieveld, Renosterveld Montagu and the Succulent Karoo biomes – the last of which is recognised by UNESCO as an international biodiversity hotspot. Esler*et al* (2006: 1) described the general area as a "harsh and unpredictable environment" with fluctuating rainfall and temperatures from year to year and decade to decade (2006: 7). At Pypsonderwater, the predominant geology was shale, with soils more prone to salinity and crusting, vulnerable to land degradation and less suitable for agriculture (2006: 10). In this context, badly damaged veld associated with kraals and water points takes typically more than one generation to rehabilitate (2006: 24), and agriculture in this context is seldom able to generate sufficient income to support a "modern lifestyle" (2006: 25).

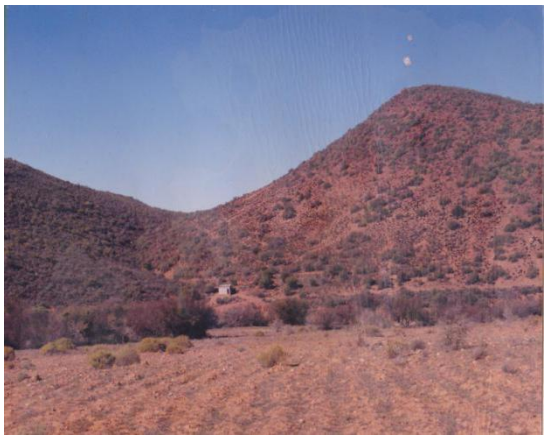


Fig. 2: Bare lands of Pypsonderwaterfarm



Fig. 3: Acacia Karoo revegetation

The principal land management strategies suggested for this kind of ecology are "the judicious use of natural resources, primarily soil, vegetation and water" (Esler*et al*. 2006: 76). These authors recommended supporting the establishment and maintenance of vegetation, reducing soil erosion, improving soil quality and water infiltration (2006: 58). Specific interventions include encouraging the use of mulch ("soil covering made up of fallen leaves, sticks, flowers and infertile seeds (2006: 54)) and trapping water runoff (2006: 109). Such interventions may include ripping[55] of the soil and digging basins that face upslope to maximise capture of runoff (2006: 109). The authors explain, "[b]oth pitting and ripping trap organic matter (litter) and seeds as well as water, and this usually leads to rapid colonisation of the basins or riplines by plants after rain" (2006: 109). They explain further that "the rehabilitation of eroded areas by the use of methods that encourage the retention and infiltration of rainfall will also help to replenish the lowered water table [associated with groundwater extraction, soil compaction and over-grazing], small gulley retention structures, brush packing, soil erosion dams and vegetation cover restoration" (Esler*et al*. 2006: 112).

Certainly, Pypsonderwater farm displayed signs of degradation typical of this kind of ecology. The dry, north-facing slopes were bare in places, and there was extensive erosion to the north of the farm (*Fig. 4*). There were visibly stark differences between

55 "ripping" means that the earth was "opened with tractor tines or even bulldozer tines, without turning the soil over, in order to break capped soil and allow oxygen, other gases and water to infiltrate the soil" (AZPI member).

vegetation types – with the dry, succulent north-facing mountain slopes, and the lusher, blue-green south-facing slopes where the renosterveld grew, and again the vegetation on the flattening valleys below. An ecologist explained some of the dynamics of the vegetation on this land to me. He said that the blue-green shrubs in the flattened valleys suggested soil disturbance, indicated by pioneer plants such as *cotyledons*, *Acacia karoos*, *mesambrethums, aisacea* and *felicias.* The presence of *mesambrethums* and other succulents growing beneath the pioneer species, which acted as nurse plants, suggested that the veld was in recovery. The regrowth of spekbome (*Portulacaria afra)* on north-facing slopes suggested recovery in those zones as well. He explained that the establishment of such plant communities reduced the overland flow of water and the volume of water entering the ravines – thus contributing to the maintenance of soil integrity. Plants such as the spekboom, he said, would gather biomass above the ground, and acted as carbon sequesters. They also created and maintained microclimates for other species to grow in the harsh Karoo climate. He pointed out the emergence of grasses on the mountain slopes, and said these were indicative of veld recovery as well.



Fig. 4 Severe erosion at Pypsonderwater

I describe the farm layout below, and the kinds of management strategies employed by members of the AZPI in realising their ecological and social ideals, and regenerating the damaged landscape.

Farm Layout and Land Management Strategies Employed By the AZPI

At the entrance to the farm there was a simple gate with a small sign on it saying "please keep gate closed". It opened onto a rough dirt road that had been the cause of numerous car problems for farm visitors and residents. The road wound northwards up the valley that was green with acacias in summer, in contrast to brown and rocky surrounding semi-desert landscape. It passed through two farms and crossed the same river five times through low drifts before one reached Pypsonderwater, the home of the AZPI. In amongst the ubiquitous *Acacia karoos*, known for being pioneer species in disturbed landscapes, botterbome in flower, cotyledons, spekbome and aloe feroxes appeared. The first home to appear, tucked into the dense acacias, was Duncan's wooden hut, and then the campsite kitchen and toilets. Around the bend and over a usually dry stream bed was the rustic "backpackers", guarded by tall cacti and joined by another, ageing wooden hut. These structures housed visitors, volunteers and course participants. From here, mountains to the north were visible, its foothills reaching down towards the valley. Petersen's house emerged further up the valley to the east, standing on the west-facing valley slopes, its orange hue complimenting the red burnt rocky hillside. Goats which had previously been farmed on the land had a predilection for the *Portulocaria afras* growing on the north-facing slopes, and had grazed a number of the hillsides bare.

From Petersen's place, the road continued to wind up the valley, passing a large dam to the west and bringing one to the "main house", a nursery and lush orchard area (*Fig 5.* "food forest"[56]) with a mixture of fruit and indigenous trees growing. If one were to continue you'd see Smith and Fourie's modest home about 400m further along the road, and passing some extensive erosion (see *Figure 4)* towards the west, one would come to the neighbour's house on the next farm, Midvalley.

56 Multi-species food production modelled on the structure and function of a natural forest, with parallels to agroecology and a concept of forest gardening

Below the dam another road took one past some small mixed fruit trees all planted in circular pans below the dam (capitalising on its seepage) which were surrounded by an array of herbaceous plants including *tulbaghia* and spinach.

On the other side of the road was Harrow's unfinished earth brick house, the winnebago that used to belong to Hewitt, and her solar shower area. There were a few pit beds here with spinach and vetiver growing. Continuing along this road, you would cross the same river again. The road forked left towards Van der Zandt and Davids's homes, and right onto the road that led past Stoller and Boom's home, through the neighbouring farms to the north, Midvalley and up to Mountainview. Stoller and Booms growing garden system, a shocking green in the dry, brown environment was visible from this road, along with their double volume mudbrick[57] house.



Fig. 5: Main house food forest

The road past the house led to a flat area of green-grey shrubs, and then wound up a parallel valley to Mountainview farm. Beyond these shrubs was an extensive area of heavily eroded land, like teeth cutting into the earth. It was not safe to walk here - it seemed like the walls of the erosion could collapse at any stage, and Boom warned me of snakes here in summer. Beyond this erosion, the fynbos appeared to improve dramatically towards Mountainview.

[57] Bricks made from natural fibres, earth, sand and water mixed together and dried in the sun.

Principal Land Use Strategies Employed by the AZPI

The primary land management strategies engaged in by the members of the AZPI on Pypsonderwater farm were erosion control, water harvesting and infrastructure development such as the establishment of roads, houses and gardens. Water was repeatedly identified as one of the major challenges that the members faced, given that the farm was bought without water rights.

The land management strategies employed by the members of the AZPI at Pypsonderwater farm were conceived of in terms of permaculture theory, principles and design strategies both at a broad scale and at the homestead and household level. These strategies were employed in consideration of the regional and local climates, local ecology and soils. In line with Mollison's recommendations, the members of the AZPI chose to occupy land that was already under agriculture, and disturbed and degraded rather than "pristine" environment - although the farm was located in a "biodiversity hotspot".

The company's website was written by the farm manager, Collier, who had spearheaded the establishment of the project. The website describes the project as a "training environment for regenerative rural settlement approaches" and "an Ecosystem settlement model for social transformation". In line with permaculture philosophy and theory, then, the project aimed at achieving social transformation through ecological interventions such as the establishment of ecologically-oriented rural settlement.

Their principle tasks in this regard were described as follows: "to remove weak connections in the web of regeneration" through land restoration, primarily in the form of erosion control and connected water management, food and resource production, economic sustainability, settlement and infrastructure, training and education. Through various erosion control and water management strategies, their aim was to "rehydrate the landscape by creating a sponge, regenerate soil life, plant ecosystems and plant productive indigenous species". Through digging swales and ripping the soil, they hoped to recharge the groundwater, manage erosion, establish

vegetation and build soil. According to the website, the swales and riplines would "spread concentrated water flow over the landscape rehydrating it and promoting succession" and allow surface run-off to be stored in the ground via these earthworks - in line with permaculture water management principles which were to "conserve, catch, spread, sink, store" water, and effectively use and recycle it. The majority of shareholders had participated in PDCs by the time of writing, and understood the reasoning behind the particular management strategies employed here as these were standard topics on the PDCs. Decisions over the larger-scale interventions were generally made in consultation with members at meetings, and the design was finalised by the farm manager, Collier, who was considered experienced with broadscale earth works.

Their aim was to establish dryland agricultural systems which did not require irrigation systems, and to only irrigate gardens at homesteads. Soils were to be mulched or covered by plants to reduce water evaporation, and irrigated with drip or microjet irrigation. The passive water harvesting systems described above (swales and riplines) were to be included in the agricultural zones, along with shelter belts.

At the time of writing, there were seven houses on the farmland, with four occupied at any one time. There was a project centre, located below the nursery and acted as a classroom during courses, researchers' cottages (known as the "backpackers"), a multipurpose room (the "outdoor kitchen"), a storage area and student and intern accommodation cottages.

The project's future aims included the building of a training centre, a volunteer/service centre, barn/processing space, tree nursery, and three additional custodian homesteads, along with the extension of the dryland agricultural systems. These dryland systems were to include "hardy yield systems", and agroforestry systems planted into harvesting earthworks which would include bio-oils, medicinal plants, hardy fruits and nuts, firewood, fodder, biomass, and the integrated grazing of small herd livestock, such as goats and sheep. The members also hoped in the future to "purchase land between farm and town to establish a labourers village and a[n] urban food growing project outside [the local town]". The labourers referred to here were the people living in the nearby town and farms who were hired to work on the farm, and

who assisted with infrastructure development and worked on individual shareholders sites and gardens. They were all employed full time during the time of research Their tasks included such things as the fixing and maintenance of roads and irrigation infrastructure, gardening, building, digging, and other tasks determined by residents in their weekly meetings. They worked both at individuals' sites and on communal tasks, depending on the needs and finances available.

All of their activities were to be integrated with relevant legislation governing their land-use activities, so that the model could be reproducible. Below I provide a broad picture of the structures and interventions made on the land, followed by a detailed description of one of these homes as an example of how the residents put into practice permaculture design theory that was applied in most of the residences. I also give details about the kinds of things I learnt about at the different sites, such as managing a small-scale irrigation system, living with solar energy, doing natural or sustainable building, and food production.

Broadscale Management Practices

Initially, members of the AZPI worked on the derelict buildings already on the farm when they bought it. They also fixed an old canal which brought water from a wetlands system upstream, fixed windmills and drilled boreholes. In the early stages of development, swales were dug near the food forest at the main house, and the food forest was planted progressively, along with a staple garden next to the main house.

Swales were used to manage erosion, and reduce the impacts of flooding. They also caught and temporarily stored water, creating conditions more conducive to plant life as they created repositories for seed as well as water, explained Stoller. The members described these kinds of interventions in the landscape as "earth-based infrastructure" which allowed water to be held in the landscape, and to slowly infiltrate the soil and recharge the groundwater. In this way, they applied the principles of "slow, sink and store" in permaculture thinking.

At first, water was sourced from a borehole which did not yield enough for their needs. A pipe leading from a stream on a neighbouring property also provided water, but only during the rainy months. From about 2007, members drew water through a pipe in a second neighbour's dam, but when that relationship soured around 2010/2011 the neighbour removed the pipe. Another source of water was negotiated with neighbours at Mountainview who had an upstream weir. They were parents to one of the AZPI members. Here the members laid a 25mm PVC pipe which led water to four 5000l tanks on a hill above the main house. From there, water was directed to each of the households, which would draw water according to a roster. One more source of water was established after negotiations with a third set of neighbours at Mountainview farm to the north. Members laid 4km of PVC piping from the neighbour's borehole to the farm, to supply them in case of emergencies, and for a few members who did not have agricultural sites and needed little water. A last source of water was a 12000 cubic metre dam that was constructed in 2009 with financial assistance from the Threshold Foundation. The grant was facilitated by the founder of permaculture association in South America, whom Stoller and Collier met at an International Permaculture Convergence in 2009. Except for a solar pump which supplied water from the dam to three households to the west, all of these water supply lines worked on gravity-feed systems, and required no additional energy besides the manpower to establish and maintain them, and the materials used therein.

Machines were used to apply the Yeoman's[58] approach to land management in the form of a keyline and key dam, which both directed water to the bigger dam. According to Stoller, a small keypoint dam was built at a point in the valley above the larger dam's location, just where the gradient of the mountainside began to level out. A key point dam is a small deep dam constructed close to the point where the slope changes from steep to flat, and it is constructed where the valley ridges are close enough together to make it economic in terms of the cost of excavation and dam construction. A key line is a water-diversion ditch that is 5 degrees off contour. It captures runoff from surrounding slopes – the watershed – and leads this down the gradient to a dam. On this farm, the key line led runoff during rain events of 50mm or more to the dam. Water would also be led down the old canal into the dam, which,

[58] P.A.Yeoman's Water for Every Farm (1973) Referenced and recommended by Mollison

when it overflowed, directed water back into the river. Stoller liked to call this system the “dance of water”. Additionally, the area to the north-east of the main house above the swales was “ripped”. Stoller pointed out that this area where the swales were dug and the earth ripped had previously been bare. A few years afterwards when I visited the farm, plants had begun to grow along and in the swales and where the land had been “ripped” (*Fig*. 6).



Fig 6. Riplines and swales visible from a hilltop at Pypsonderwater farm

Communal Facilities

Facilities shared by the members of the AZPI included the main house, food forest, campsite and backpackers. I describe only the main house and food forest here for brevity. The main house was there when the farm was purchased by the AZPI. It was falling apart, and consisted of an old stable and modern brick structure. What was bare then was now surrounded by a series of vegetable beds which would be cultivated with the presence of long-term volunteers and ahead of courses. Just

opposite the main house was the nursery (an area which doubled as a teaching space during courses) and the food forest which was established 8 years before. The harshness of the dry Karoo veld was broken here by some thorny *Acacia karoos* that flowered in showers of small yellow pompoms in the summer months. Through the network of branches and thorns, much softer, leafier trees came into view. From the hill above this food forest, to the south-west of the main house, the fruit trees seemed indistinguishable from the acacias to the naked eye, and it appeared that this food forest area under cultivation was part of the *Acacia karoo* thicket that followed the watercourse of the valley. But up close, one could see figs, nectarines, peaches and plums. In the thick of this food forest the *Acacias* were outnumbered by other indigenous species that followed the road and were interspersed within the food forest - *Budleja salignas*, *Rhus lancea*, wild olives (*Olea europea*), *Rhus crenata* and *Celtis africanus* (white stinkwood) amongst others. The road and the entrance to the food forest was also lined by large cacti.

During my observations, there was one long vacant bed covered only with a layer of vetiver mulch. It was occupied by some perennials and herbaceous plant varieties - lavender, rosemary, comfrey, New Zealand spinach and thyme. At the end of the line of fruit trees, parallel with the end of the nursery, the beds multiplied. There were two beds that were densely grown with a brown sage, a lot of the pungent - and to my nose, rather off-putting - green-blue rues, lavender and cactus. These were narrow beds and no edible plants appear to be growing in them. These strong smelling plants which grew in bands between the cultivated beds I learnt were grown to attract pollinators and insect predators for pests, and also as repellents for unwanted insects (in particular, the rue). This method is referred to as “Integrated Pest Management” (IPM). On either side of the beds were additional oval beds that contained more fruit trees, surrounded by herbaceous plants and in some cases, strawberries, leeks, spinach, New Zealand spinach and lemon balm. At various points amongst the fruit trees and beds were indigenous species - more *Olea capensis* and some *Aloe ferox*. If one walked to the eastward end and the last beds, one found a border of cactus again.

On the southern and principal part of the food garden, one brushed past the densely populated garden and invariable release of the potent fragrances of rosemary, lavender or rue, agitating intrepid and industrious bees. A finger of food forest extended

northwards from the main section, and here there was a bit more room between trees and plants. The intermingling of species was consistent throughout this cultivated area, where a range of other species grew. The main house, backpackers, nursery, food forest and water infrastructure all constituted communal assets owned by the AZPI and managed collectively by the various committees and members.

The Homesteads

Members of the AZPI were able to build their own houses on Land Custodian Sites, and make use of communal resources. Some members had begun to build houses. These had to be built in accordance with the AZPI's constitution and regulations, as well as South African law. At the time of writing there were 7 units constructed. Although they were each built to suit the needs and aesthetics of each LC, in most cases they followed similar patterns: they were by and large north-facing, built mostly from "natural" materials (clay, sand and wood), captured solar energy through photovoltaic panels, drew water from the water supply described above, and recycled that water into the garden systems at the homes. Permanent residents had gardens which supplied their homes, and all the homes harvested rainwater from their roofs.

I lived in five of the shareholders' homes, particularly those which had active systems which required constant attention and maintenance. My experiences at each of these households emphasised different dimensions of trying to live sustainably using permaculture design and principles. At Petersen's home, for example, I learnt more about natural building, at Stoller and Boom's I got a lot of insight about food production systems, at Collier's irrigation and water systems were most prominent, while at Henks I encountered energy systems. However, I learnt about all of these aspects of self-sufficient homesteading in different ways at each site. Not all of the houses were in permanent occupation, and some were only visited once in a while by members who worked off the farm. I stayed in the homes of people who needed their homes and gardens taken care of, and it is these homes which I provide detailed accounts because they demonstrate how permaculture design was put into practice on a daily basis.

Those members who did not live on the farm permanently did not need their homes to be maintained much by others. Three members had small wooden wendy houses without gardens. They did have rain tanks catching water off the roofs, and small solar systems to supply power for lights and appliances. Because they were not occupied much, there was little in the way of gardens except for the hardiest of plants. One home was incomplete at the time of writing, and had a small garden that was watered on a weekly basis by hired labour. The owner lived in an old winnebago bought from previous members when she visited. One member did not have a site at all.

Given the common design approaches employed by the various residents at Pypsonderwater farm, I provide a detailed case study of only one of them as representative of the ways in which permaculture design was put into practice in this context. This is followed by specific accounts of different aspects of living self-sufficiently: the kinds of knowledge and awareness required to do that, and the challenges entailed in doing so.

Stoller and Boom, who moved to the farm in 2006, had built their home over the course of five years. Stoller, as mentioned previously, had extensive experience teaching and practising permaculture in a range of contexts. Boom also had agricultural experience, and had worked with Stoller growing food before moving to the farm. Both had worked with two French architects who taught them about natural building while they were involved in a project initiated by Stoller. When they first arrived at Pypsonderwater, they fixed the goat shed and lived there while they settled in and confirmed which site they would occupy. Boom asked the community if he and Stoller could occupy a site across the river. It was zoned as communal land, but the group agreed to allow them to occupy the space. The site was just below a hill, near the edge of the farm's western boundary, and along a road which led to the neighbours' properties to north. They initially moved into a caravan on their site, allowing them to observe the various dynamics affecting the location. Boom said that the area was very eroded and degraded when they got there, but it was fertile. They needed to do a lot of clearing, and used machines to fill erosion gullies and aardvark holes. Once that task was completed, they were able to get a sense of “how the gardens and flow should work”, and where to place the house.

The house which they built they surrounded with a cultivated garden system which, like the house, the occupants were constantly developing. Other structures on the site included a shaded car port (used as a nursery area) next to a small mud brick storage room (built as a test for the final house), a larger corrugated iron storage room, a small ablution area, a pit latrine and a fenced in chicken coop. Piles of earth and clay lay in a circle at the bottom of the garden (to the south of the house), and were used incrementally as work was done on the house. At the time of writing, the main structure of the house had been completed, needing only to be plastered and painted, although there were plans afoot to construct a more formal bathroom and an outdoor kitchen.

The house was built of a combination of mudbricks. The materials were sourced from the earthworks and landscaping conducted on site, with the excess soils being moved to into the piles described above. Sand was sourced from a river on the farm which deposited the coarse sand grains on its banks after heavy rains. The foundations were made from rocks which were in abundance on the farm. Boom explained that the ratio of materials used for the bricks on this site was, in general, two parts each of earth and sand, and one part clay sourced in the deep erosion gullies near the river. During the extraction of the clay, the earth would be shaped so as to reduce erosion. Making the mud bricks was slow and difficult work, he said. With the help of two hired labourers and one other farm resident, he made bricks for about 3 months, working two days a week. First, the mixtures of sand, clay and earth had to be mixed manually with water and straw. The straw was procured from a farm near Swellendam, about 150km away. “That was what was available,” he said. Then they had to be cast in wooden mould , and left to sun-dry.

Plaster was made from a mix of fine sand and clay, and painted with a mixture of water, lime and clay. It was built by the residents with the assistance of 3 labourers and various volunteers. The roof, made of reclaimed corrugated iron, mimicked the shape of the distant hills and mountains. Materials for the house were mostly procured second hand or in the local area. For example, poplar trees were harvested from a nearby farm and processed at a local (now defunct) sawmill. Roof sheets were made of second-hand corrugated iron, and the floor tiles were recovered from a renovated

municipal building in Cape Town. Concrete was utilised *ad minimum*, and thrown for the lounge and the pantry floors, using a standard 5% concrete mix. It was also used in the foundations where the walls were double volume. Smith explained that this was because it was quicker and easier than using just stone, which could have taken months to set.

The house had been designed according to a "desert climate strategy", according to its occupants, given the extreme climate they lived in where the summers were very hot (up to 45 degrees celsius) and the winters below freezing. The house, built with materials known for their high thermal mass, was oriented northwards to capitalise on the sun's warmth in winter. The materials used for the walls – mud, sand and straw – did not warm up much when shaded by the trees in summer, and were able to retain heat when exposed to the sun in winter. Deciduous trees were planted on the eastern side of the house and evergreens on the west, to provide shade in the summer and thereby keep the house cool. These trees, I was told, also provided a cooling effect because of the evaporation associated with transpiration. In winter, the deciduous trees would lose their leaves and allow the sunlight onto the house to warm it.

The north-facing house consisted of a lounge/office area at the most northern end, followed by a smaller double-volume kitchen, then a small bedroom, and at the very south of the house was a narrow pantry. The various rooms were staggered, creating shade in their wake to the south. This southern area was mostly covered by a roof, creating shade for the deep veranda in summer. I was told that this cool veranda would catch the winds moving up the valley during the day, cooling off the air as it passed through. Small windows on the northern side of the house would warm up during the day, and with the consequent change in air pressure, draw this cool air through the house. The occupants reckoned that the house was 8-10 degrees cooler inside than out in summer. The pantry was built on the southern-most, and most shaded end of the house. Here, preserves, foods and seeds were stored, where the average air temperature was 10-15 degrees celsius lower than the outdoor temperatures. A small veranda provided shade for the northern side of the house (over the lounge) in summer, when the sun was higher. In winter, when the sun's angle lowered, sunlight was able to penetrate the house to warm it.

Just to the east of the house was a shower and washing area. This had a concrete floor, and was closed in with a screen of reeds. A solar geyser was raised over this showering area, and supplied hot water to the kitchen and the shower. The waste water from both these sources was channelled into pit beds just beyond the house to the east. These pit beds would be planted with cucumbers, loofahs, African Horned cucumbers, chillis, peppers, basils, chamomile, tomatillos, New Zealand spinach, spinach and squash, amongst other things. Their water supply was supplemented by water delivered through spray irrigation.

Water harvesting techniques employed at this homestead resembled those used at the broader scale on the farm. Passive water harvesting techniques were employed in the form of swales – long surveyed on-contour trenches or ditches. A series of large swales (+/- 1m x 1,5m) had been excavated above the road. The excavated soils were mounded below each swale into levelled beds. These were planted with fire-resistant, medicinal *carpobrotus* and bulbinis. The rows of swales overlapped, and aligned with the mountain contours. These swales were constructed in order to slow the movement of water over the landscape, and reduce erosion from mountain runoff. Stoller explained that big rain events would flush salts from the earth, and that these salts also collected in the swales. She said that the swales spread water along contours, rather than the water being channelled down small ravines or streams straight to the river. In this way, rainwater was introduced into the landscape (rather than just flowing away downriver). I saw the swales in operation during a heavy rain event once. They filled up, and would overflow into one another when full. They appeared to be fulfilling their intended functions, holding the water for a few days before they were empty, after which one could see layers of fine silt that washed down the slopes.

The garden (*Fig*. 7) radiated from the house. Stoller estimated that it was about 750m^2. The larger section of garden, to the west of the house, stretched between the road and the house, and from above one could see the undulating curves of the garden beds and different sorts of vegetation, placed on contour. Along the driveway, the gardens were edged with a hedge of vetiver. Between the productive beds were rows of thick shrubs that grew along a north-east/south-west axis to create a wind barrier for the prevailing north-westerly and south-easterly winds. The windbreak contained both edible and medicinal plants. In this garden were smaller versions of the swales above the road,

these measuring about 0.5m in depth and width, and were also dug on contour. Between the swales were the bands of windbreaks, and circular and horse-shoe shaped beds facing up-slope, intended to maximise passive water harvesting. The circular beds each had a broad rim and were levelled, in order to keep water in them and allow it to spread evenly. Within these beds grew fruit trees, and annuals such as artichokes and squashes.



Fig. 7: Home garden



Fig. 8: Mandala garden

To the south of the house was a “mandala garden” (*Fig*. 8) (made on the internship I participated in in 2011). This was a circular shaped area made up of six circular beds within it, and a wire cylinder at its centre where garden and food wastes were deposited. It was enclosed by a thick hedge of vetiver. The vetiver, a fragrant, fibrous plant that is used in perfume manufacture, acted as a windbreak, provided material for mulching the garden. Stoller had intentions to use it for weaving. Within the circle of vetivers grew, depending on the season, tomatoes, lettuces, brinjals, herbs or beans for example.

Approximately a third of the garden was dedicated to seed production. It took longer to see the product in this case because it was necessary to allow the plants to follow their full cycle, explained Stoller, rather than harvesting only their fruits. She told me that most of the seeds that she propagated were from seed that she had grown, or had been given to her. She informally traded seed with friends who had a shared interest in seed saving. But she did not grow seed just for the purposes of growing food: for Stoller it was personal and political. She explained,

> It allows food sovereignty in the face of globalisation - to maintain a broad genetic stock of adapted seed. I like to give it away because it is empowering, people can get access to heritage seed. That keeps a big gene pool going. What is in the shop is generalist. Personally, I like the variety of flavours. I feel like a curator. I have received amazing food and medicine varieties and it is my responsibility to curate them. It is a life task of growing, breeding, selecting and keeping special strains going. We’ve lost 98% of food diversity, and there is a huge push to control the global food supply especially through larger seed companies controlling what is on the market.

Stoller was similarly motivated to grow her own food, explaining:

> Genetically modified seed erodes food sovereignty. A few companies control what is grown and eaten. This leads to the loss of locally adapted biodiverse food and medicine varieties. It is technocratic, bureaucratic, licensed, regulated and out of the hands of the people. It is disguised as phytosanitation. Most people who grow seed are very ethical people who are aiming not only to make

> money. They care about the end user, so won't sell them shit. It is also creating a culture around food, where it comes from - a culture of seed stewardship and taking responsibility back for food sources, and ensuring the longevity of food sources and making sure in all various bioregions that we grow and breed plants adapted to the particular climate and soils and potentially more resilient to potential climate change. Our varieties will become tolerant of alkaline soils and slightly saline water, extreme heat and extreme cold. We are not working with subtropical species but rather semi-arid species, but not necessarily those which are drought tolerant.

The gardens reflected the zoning theory of permaculture, with those plants which were more delicate and required regular attention – such as lettuces and tomatoes (which she had to keep birds and mice away from). Similarly, the sectors concept could be seen in operation in the design of both the garden and the house, which took into account prevailing winds, and radiation, for example. However, Stoller pointed out that the soils were mixed up on their site due to the floods which had occurred here, and the movement of soils during construction. There were patches of clay, sand and silt, and she had to plant varieties in the soils that were suitable for them to grow in, and could not always follow the ideal zoning concept. For example, root crops that would usually be grown in "Zone 2" struggled to grow in the boggy clays, and preferred sandier soils. In this case, they needed to be grown closer to the house where those soils were.

Stoller and Boom stored water drawn from the main line into four 5000 litre plastic tanks on the hill above their house. With the small number of residents on the farm at that point in time, they were able to fill their tanks twice a week. Only two tanks were in use then. They were able to draw water from the dam, but did not at the time of writing. The water was piped via gravity-feed to the gardens and the house. Stoller estimated that together they used approximately 120l of domestic water daily, for washing and bathing. That water was reused in the garden. An additional 10 000l was used a week in the garden during summer. During rainy winter months they used about half as much water. A 2200l plastic tank on the cool, south side of the house stored rainwater harvest from roof run-off for drinking,

The garden was predominantly under drip irrigation. Stoller explained that using drip irrigation reduced evaporation, because the water dripped right over each plant that required watering. The soil was covered with a layer of mulch, which further reduced evaporation. Some of the garden was watered by hand, such as the nursery. Seedlings here required water twice a day for 20 minutes. There were only four irrigation lines supplying different parts of the garden, and it was a simple schedule to follow.

The garden required constant attention, and the cultivation of awareness and timing. The different sections of the garden ran on different lines of irrigation, and had to be watered at regular intervals. Here were various taps which were turned on and off morning and evening to supply different parts of the garden, the shower (which had to be filled manually) and a general use tap. For example, there were two taps which supplied the mandala garden (the outside and the inner circle), and they were run at different times. One section supplied the inner circle of annuals (lettuces, tatsois, spinach, tomato, herbs etc.) while the outer section supplied the perennials, windbreaks and an outer circle of vetiver, lavender, rosemary etc. The two other gardens – the larger one to the west of the house, and a smaller one between the house and the nursery, were under separate lines of irrigation. The gardener had to keep track of what had been watered and what needed to be watered. The task, as I learnt at Collier's house, could be more complicated as the garden system developed and grew. I provide more information about my experience with this towards the end of this section.

Irrigation was just one dimension of taking care of the homestead garden. While Stoller went about her morning routine of feeding the chickens the kitchen food wastes, grains and water, and watering the nursery, she would take some time to observe the garden: feeling if the soil was dry or moist, observing the various plants' progress, to see if there were any pest outbreaks, which plants were flowering or fruiting, or keeping francolins out the garden (which scratched it up). She said that gardening was a task that one had to keep up with doggedly and constantly as things were always changing. She was loathe to say out loud that the garden would be good that season - she called it the “gardener’s superstition”. The previous year she had a mouse infestation and before that, a bird infestation. Weavers and bishop birds ate the seed meant for saving and sale, and the mice would gnaw on unripe tomatoes.

Besides maximising or minimising the effect of natural climatic conditions through household design, Stoller and Boom further harnessed the sun's energy by using photovoltaic energy (solar) systems. They had two solar systems that supplied their house. The first consisted of two solar panels that provided 180 watts of power. These were connected to a regulator, which in turn connected to two linked 102 amp hour deep cycle batteries via a 300 watt modified sine wave inverter, which converted the solar system's direct current (DC) into alternating current (AC). They were thus able to power devices and equipment which required 220 volt DC power, such as a hand held blender or laptops.

The solar system needed to be used with awareness of the sunlight each day, in order to ensure its longevity. I was told that it was best to use power once the sun was high, around 10am in summer, allowing the batteries some time to recharge from the previous day's use. It was only to be used sparingly on cloudy days, if the batteries were fully charged. If the inverter began beeping, it meant that the batteries were running low, and the power should be turned off. If these precautions were not taken, it meant running the risk of depleting the batteries to the point that they were unable to fully charge, explained Stoller.

Gas was used primarily for cooking food. Other cooking technologies were used as well. In summer a solar oven was used to bake breads, make stews or cook beans. This was an oddly-shaped box that refracted sunlight off a mirrored surface through a glass lid into a reflective container wherein would be placed the pot of food to be cooked. It took up to an hour to warm up before food could be cooked, and had to be moved periodically throughout the day to maximise sun exposure. In winter, harvested *Acacia* wood was used in a wood stove, rocket stove and for open fires.

Wastes which could not be used on site – glass, plastic, and tins - were taken to the nearest recycling facility, 90km away, when other errands had to be taken care of there. Those wastes which could not be recycled would go to the waste dump. Paper was incinerated on a weekly basis.

As indicated above, organic food waste was either given to the chickens to eat, or placed in the pit beds, along with waste water. The chickens played an important role in the gardens' fertility cycles. They were kept in a “straw yard”, or chicken coop. According to Stoller, 2 cubic metres of biomass from the garden (in the form of prunings of windbreaks and cleared beds) were put in the straw yard each month for the chickens to scratch through and peck at, along with the food wastes. Once the chickens had scratched through this biomass, and defecated in the yard over that period, the contents would be removed from the yard, and made in toto a compost heap. The resulting compost was then used on the garden. The chickens, in turn provided eggs for eating and the garden provided vegetables and fruits. Excess generated in the home was thus cycled through the garden, and back into the home.

Attaining Self-Reliance and “Being Your Own Municipality”

While most of the homesteads I occupied temporarily followed similar patterns in terms of household design and resource usage and management, they were each designed differently and displayed distinctive features. I learnt particular aspects about self-sufficient living at each, in terms of water, energy, building and food production.

I had been accustomed to having ready access to water where I lived in the city: I would turn on a tap, and water would come out for me to bathe, clean and water the garden sparingly. At the end of each month, I would pay a bill. At Pypsonderwater, I experienced a very different reality. As mentioned earlier, the residents had repaired and extended their water access, laying pipes from various sources, with which they would fill the tanks at the main house. Various residents described how in the early days of occupation, the pipes would regularly burst in summer, or freeze up and burst in winter. They would have to track the faults. I was told that they would have to run around the farm looking for weak points, leaks and burst pipes, at night or in the searing summer heat.

From the main house tanks, the water would be piped to the different members' homes, and they followed a schedule. Some of this water came from a weir upstream, from

the Mountainview neighbours, and from the dam when it had sufficient water. Two households drew water from the neighbours, and the rest drew from the “main line” supplied by the weir. When drawing water from Mountainview, a set of taps had to be opened in order to open up the neighbour's line, and to shut off the main line. The rest of the residences took turns to draw water and fill their tanks. Due to the pressure of this system, if a resident lower down the valley had their taps open, anybody up the valley would not have adequate pressure to fill their tanks because the water would drain down to the lowest user, so the schedule had to be followed closely for everybody to get their turn.

Although the system had been explained to me, I regularly made mistakes when filling tanks. Sometimes I would forget to open the taps at the appointed time, or forget to switch them off and the tanks would overflow. I would forget that irrigation systems were on, and drain the week's water supply. On one occasion, for example, I switched over the wrong taps to draw water from the neighbours, at the wrong time. I was filling Henks's tanks one day and it was not the appointed time. Shortly after, Stoller received an email from Collier asking what was going on with the water. He was supposed to be irrigating, but could not draw any water. Because he had opened his taps, what water remained in them had drained out, and only air was left in the pipes. This meant that when the line was reconnected, there were airlocks in the pipe, and the water could not flow. Boom agreed to help me find the problem and correct it. First we went to Davids' house and opened the tap there, to see if we could let the airlocks out of the system. We let the tap run for ten minutes, but the water remained full of air bubbles. We then went up to the weir, about 2km upstream. Here we found the 25mm pipe that lay in the weir. Boom cleared any debris out of the outlet that may have got sucked down because of the air in the pipes. We then went up to another set of tanks which drew water from the neighbours, and let this run for some time. However, I had not switched the correct taps on at the main house. Collier spent the better part of the following day getting rid of the airlocks. As a consequence of all of this, I did not actually fill Henks's tanks. Fortunately, there was an open slot in the watering schedule, and I could then fill the tanks with assistance from Smith in turning the correct taps on and off at the main house. These seemingly small mistakes ended up costing these members a lot of their time. I thanked Boom for his assistance, and apologised to Collier for the time wasted as a consequence of my actions. He said,

“You have to be absolutely on the ball when handling the water system ... One mistake causes chaos. Such is the nature of gravity-fed systems”. My mistakes and confusion did not lead to any major problems, were explained to me with patience and understanding it seemed to me.

At the domestic scale, water supply was also not as simple as turning on a tap. I learnt the most about domestic irrigation of complex permaculture systems at Collier's homestead. Collier showed me his irrigation system when I was to take care of his family's home for a second time. The system and taps had changed since the first time I was there, and he took me rapidly through their system, showing me the various taps, and which parts of the garden needed watering at which times. I took notes, but I was quite confused.

At first, the irrigation system seemed very complex to me. Collier's tanks were filled once a week between 8pm and 7am from the main line. Petersen, who lived downhill from Collier, would take water the previous day until 8pm. It was not possible to fill both homes' water tanks at the same time because of the gravity feed system. There were two sets of pipelines running through the garden, with various taps along them. These were marked with tags “ML” (main line) or “DL” (dam line). The water tanks were filled by the main line. From the dam line, only two systems could be watered at once, either two on drip, or one on drip and one on spray.

The irrigation needed fairly constant attention. Sundays were the busiest days, with changeovers of systems at 7am, 10am, 1pm, 4pm, 7pm and 11pm. During the rest of the week, the irrigation ran from 7am-12pm, and from about 11pm to 7am. The irrigation tasks, along with other duties such as feeding chickens, giving foliate feeds or removing fruit from beneath the fruit trees could take up to 4 hours for me. Various sections of the garden required water at different intervals, and these had to be turned on or off at specific times, to coincide with water use by other residents. The house and reservoir gardens got microjet twice a week. All the other systems got sprayed once a week, between 8am and 12 pm.

Stoller came over to go through the whole irrigation system with me in my insecurity. We checked all the tap points to ensure that I knew what was what. She again showed

which the principle pipes were, and then we tracked each of the systems. I knew most of them, but did have some remaining confusion. By the end of the month, I was confident with the irrigation system here.

Similar to my usual water supply in the city, I had coal-powered electricity “on tap”. I would flick a switch, and the lights or appliances would turn on – barring when the country was experiencing rolling blackouts, when we would go without power for 3-4 hours at a time. Regardless, at the end of the month, the bill would be paid. As described earlier, all residents of the farm powered their electricity needs using solar power, or photovoltaics. These had to be used with the kind of consciousness described for Stoller and Boom’s household. Usually, if taken care of in such a manner, they ran fairly problem free. However, whilst taking care of Henks's home, I learnt that they could also present challenges. I took care of Henks's house for one month. He ran lights, appliances and a solar refrigerator off his system, and had enough batteries to power them all. All went well until one day I heard an incessant beeping sound and a fizzing emanating from where they were housed in the ceiling. I contacted Collier, who was taking care of Henks's infrastructure while he was away. I learnt that I had mistakenly left the inverter on, although I was not using any power. Collier told me to always switch off the inverter when I was not using it, and that I should take care during hot weather because they could overheat. Henks had apparently already blown one solar system because he had overloaded it. Collier explained that Henks had linked up a series of batteries of two different kinds - lead acid and calcium acid. They charge at different rates, he said, so it was not good to have them in the same system because the lead batteries can end up draining the calcium batteries.

After our conversation, I decided to check the battery water, and saw it was below the level at the bottom of the tube in the opening. Van der Zandt had come past on a walk up the valley, and seemed to think that filling the battery water was a good idea. I did that, and later told Collier. He said to me that the water had been to the exact level it needed to be for that system, and that I could not remove the water because it would put the electrolyte balance out by removing the water as the electrolytes will have distributed throughout the water. He told me not to ever do anything with community property without first consulting him. Then he instructed me to put baking soda down

if the batteries bubbled over, and newspaper and a towel to soak up any of the noxious battery acid if they did bubble over. I kept an eye on them for the rest of the time I stayed at the house. They bubbled over a bit, and in my anxious state, I scattered a lot of bicarbonate of soda next to the batteries. I felt very bad about my mistakes, and again realised partly what it meant to take responsibility for one's own power.

Roads on the farm were also maintained by the members themselves, with assistance from paid labourers. When there were big rain events, the river would wash away the drifts where the road crossed the river. Fixing the drifts and holes in the road meant hauling rocks from locations on the farm, or from various places in the nearby town to the problem areas. Hours and days would be spent throwing rocks into the drifts and holes in the road. The labourers and members also built stone gabions to reduce future damage. This was an annual task at minimum. One day when I was assisting, we collected six loads of stone in one vehicle.

All these responsibilities that would usually be taken care of by state municipalities were taken on by the members of this community and the paid labourers. From my experience taking care of the homes here, and what I heard and observed in the daily farming operations, these were not simple tasks. They were time-consuming, and required constant awareness of usage. Such self-management of utilities usually provided by municipalities also engendered an awareness of how much one consumed and produced. Stoller told me, “it is hard work being your own municipality”.

Knowledge Acquisition and Sharing: Building homes and growing food

In the process of installing and maintaining such infrastructure, the residents showed considerable solidarity. When things went awry, such as the electricity and water problems that I encountered or caused, members were quick to assist me. Those who had already installed their own plumbing, electricity or water tanks were able to assist others. In the process, I learnt that a lot of knowledge was shared between them, and I learnt a lot too.

When I was volunteering with the different members and on the farm, I learnt how to lay drip irrigation, do tile grouting, how to make composts and mud plasters, about fixing windmills, how to install a solar geyser and store seed, and how to cook with a solar oven, amongst many other things. I learnt different dimensions about particular themes relevant to the context with the different members.

With Petersen, for example, I learnt a lot about natural building. I assisted him with a number of projects. These included reconfiguring a windmill, and helping to build his conservatory. Some of the tasks in this process included sealing windows with rubber seals. Petersen explained that this ensured that no air could get through the gaps, and it could make a big difference to the thermodynamics of the house.

We also made two arch ways. The arch moulds had been given to Petersen by an architect who had been on a natural building course on the farm. Two volunteers joined us towards the end of the project. In this process, I learnt (and taught the volunteers) how to make a cob mix for the daga (mud plaster), and how to lay bricks. We would mix 4 buckets of red earth found on site with water and straw. The process involved making a heap of soil, and a depression in the centre. Water is poured into the centre, and soil added slowly from the sides with ones feet. Once the depression is filled, the mud is trampled through by sliding one's feet across the soil and into the water. Straw is added at intervals, and the trampling continues until the straw, water and mud are well-mixed and at the desired consistency, neither sloppy nor stodgy. We would then pass buckets of mud along a human chain to Petersen to apply the mortar. Then we would pass him the mud bricks. The bricks first had to be dipped in a bucket of water twice, so that the wet daga (mortar) could bond with them. Petersen then set each brick in place to lay the archway. Careful attention was paid to the angles of each brick such that they fit snugly and symmetrically together, and into the adjoining wall.

At the Permafest in 2013, a permaculture festival held every two years by one of the members, Petersen explained the logic behind the specific way in which the mud was trampled on in a presentation he made there: “The mix is bonded by clay. This is not just fine sand. Clay particles are flat platelets that are bonded by electromagnetic energy and moisture. Water is used to line up the particles in your earth mix, by

stamping on the cob. Straw is used for raising the tensile strength of the cob, and provides greater insulation (hay is nutritious, and tends to attract insects, so this is not good for a cob mix). A particular percentage of clay - between 15-20% - is critical."

In the gardens I was constantly learning small tips from members. They would also ask each other for advice, and most often in the weekly farm meetings, conversations would veer towards the garden. For example, Scheepers told me that the pumpkins which she grew for seed had to turn yellow for you to know that they were ready to harvest. I learnt how to tie up tomatoes to a trellis by the little stalks off which the tomatoes grew, and that mulch needed occasional moistening in order to keep the microbial processes in the soil alive, which was not achieved through drip irrigation. To know when chamomile was ready for harvesting the seed, one should look out for the petals of the flowers curling back. I learnt how to process foods from the garden, so that that which could not be eaten immediately did not go to waste. I learnt to make sauerkraut, to bottle tomatoes, make relishes and beer, as well as dry fruits in the sun and heat.

Besides the practicalities of maintaining a complex productive mixed crop garden and supporting infrastructure, I was able to see permaculture design theory in practice at the various homesteads. In both Stoller and Collier's well-established systems, I was able to observe the concepts of diversity and complexity in action. Linkages between systems e.g. household to garden, passive runoff capture, or the use of resources from one garden system in others (e.g. vetiver windbreaks being used for mulching fruit trees) also became evident. Collier excitedly showed me one day when it was raining how his water system was working. The pathways leading down the hill through the gardens were channelling water to the horseshoe-shaped beds and pit beds, and the swales were filling up.

These gardens provided illustrations of how permaculture design was used to inform food production and environmental management, and the way in which the ideal of integrating natural and human systems was brought into being. At Collier's, I observed a wide variety of fruit trees, intermingled with smaller, annual species cultivated for consumption. Indigenous species were grown in bands to act as windbreaks, and these were grown above swales which caught passive runoff during

rain events. Trees and beds were shaped to maximise rain water catchment as well. Household consumption and production of "waste" was linked to the cultivated gardens outside. Food wastes were composted, and returned to the gardens for fertility. Used water returned to the garden as well. Sunlight was captured for energy, and wood harvested from the *Acacia* thickets for fire and warmth. I also learnt that working "with nature and not against it", in a place where "nature" abounded, also meant that there were sometimes unwanted encounters "with nature". These included close encounters with large (sometimes 2m long) poisonous and aggressive Cape Cobras, mice eating foods or electrics and tempting those very snakes into the house, porcupines or tortoises feasting on fresh garden produce, or hawks eating the chickens. The homesteads demonstrated the maximisation of passive or natural energy flows, such as water channelled via gravity feed supply to the household, or passive channelling of rainwater into garden beds; as well as the capture of solar energy.

The AZPI was an initiative not only where individuals were able to put permaculture ideas into practice and to experiment with applying ecological knowledge outside of a scientific context, but where others learn about these things as well.

The paradoxes between self-sufficiency and freedom in a capitalist state

The picture described above is that of a group of people who started out young and idealistic, who wished to find like-minded people with whom they could live, and together create change vis-a-vis environmental degradation, and social transformation with regard to connected global economics or problems they identified with that. Some were motivated by a love for the landscape and a desire to "be in nature", grow and attain healthy food in a manner not damaging to the earth. Others were attracted by the social relationships, and the relationships with the land they were able to build by living and engaging with the landscape which the project participants occupied. A part of the appeal for all of these motivations involved a dimension of rejection of things such as city life, isolation, elitism, greed or competition, the destructive dimensions of industrial agriculture, and ecological degradation. They saw their involvement in this permaculture project as an escape from these dimensions of contemporary social and economic dynamics, or as a solution to them.

Most of them had tertiary education, and opportunities not afforded to the majority of South Africans at that time – opportunities to travel, attend festivals and experiment with sustainable living. Many were involved with in permaculture's birth at Rustler's Valley, and had experimented with permaculture ideas and practices in various locations. These long-term social relationships and engagement with permaculture ideas remained meaningful and relevant years later, and even for those who had left the project. By pooling resources – money, time, energy and knowledge – they were able to buy land together where they were able to begin to actualise a model permaculture system, and at the same time form one catalyst in the formation of community around permaculture ideals and ideas. It was here that this group was able to provide the space and facilities to educate others interested in living sustainably with an ethical core that envisioned ecological-social integration, through the creation of self-sufficient, ecologically-oriented and responsive human living spaces.

What emerges in the above accounts of people practising permaculture, are narratives that point to a revaluing of human intrinsic worth, as part of ecological processes rather than above or outside of them – and within that, a valuing of the seen and unseen contributions made by living and non-living elements that make up the ecological webs which these practitioners of permaculture saw themselves as a part of. Actualising the permaculture ideals, explicit in the group's constitution, entailed a self-organised form of social regulation that governed the activities, rights and obligations for members of this project, and were aimed at realising positive human and ecological benefits with reference to the ethics of permaculture – earth care, people care and surplus share. These organisational structures, rules and regulations generated from within the group were utilised to make decisions over land management strategies, informed by permaculture design, in order to realise those ideals.

In a sense, the group was experimenting with working with new social models aimed at creating new and different forms of social engagement in line with permaculture ideas around human-ecological harmony and integration, and which aimed at inclusiveness and representativeness. In the process of this experimentation, borne out of a desire to create an alternative to what was perceived of as “wrong” or perhaps

“counter-intuitive”, participants reported undergoing struggles within themselves, and personal change. Differences of opinion and personality emerged, and ideas and decisions were made. The process was imperfect, and not all were completely satisfied with the results. And yet, still they remained engaged with both the community of this initiative, and with the permaculture ideas and ideals in a capacity which they saw as meaningful and relevant.

On a practical level, participants put permaculture into practice on the land. They did this through consideration of local climatic patterns (with high extremes and unpredictability) and by intensifying their use of natural energy flows and natural resources, and tried to integrate with natural processes to best effect. Rather than externalising their consumption and production of basic amenities, they internalised them by linking with natural cycles – e.g. by cycling their own organic waste materials through their food production systems, and maximising the use of water entering their homestead and productive systems before releasing it into the river systems. Their homes were similarly maximised their use of natural or passive ecological processes, such as harnessing sun energy, designing to capitalise on heat and shade, wind patterns and foliage. Gardens were designed to hold moisture through earthworks and the use of mulch, along with the creation of micro-climates using diverse and productive tree species.

Here, permaculture design theory and philosophy were applied with the aim of creating human systems for reproduction and the meeting of the participants' own basic needs (food, shelter, energy, water etc.) that linked directly to “natural” systems and cycles, as well as realise their own personal, political, economic and ecological visions.

In practice, however, it became clear that an attempt to be self-sufficient and to realise an ideal of self-regulation modelled on ecological processes, and linking into those processes, is not and probably cannot be isolated from broader processes at this particular point in time – such as the contemporary economics and a dependence on products such as petroleum and technologies, and the need to create a cash income; a dependence on external water sources, state laws governing agriculture practice and

land-use, and the economics these impose (such as having to pay for re-zoning, lawyers, registrations, rates and taxes etc.).

The hand of the law seems inescapable. It appears to be tied to private property ownership, and to the specific legislation that dictates what activities are considered legal on land falling under different municipal zoning ordinances. Moreover, trying to realise access to land and realise an ideal of communal living by engaging with the legal system appears to tie individuals into particular legal governances structures and strictures in order to access land in collectivity. These legal parameters suggest a fundamental challenge to the realisation of a notion of freedom. Any activities seem bound to the legal structures surrounding land ownership and management.

The regulations and responsibilities developed within the company that required cash and labour contributions itself replicated the extraction of taxes that a state requires of its citizens, and were used in some cases punitively. In this way, the organisation appeared to replicate features of state that demanded taxes, but also necessitated engagement with the capitalist system it was attempting to withdraw from by demanding cash levies used to develop or maintain the water, roads and other infrastructure on the land.

Land tenure, the legal system, and internal systems developed to manage natural resource access all worked to regulate and structure social and, it would seem, ecological relations that were intended to be patterned on a model of freedom and non-hierarchy to be observed in nature. Moreover, that the project required additional labour further meant that the participants and the initiative was tied into the capitalist wage economy, that is widely understood to be exploitative and which permaculture discourse is seen as providing an alternative to.

It was patterned upon watersheds and water supply, and was largely defined in its development by challenges around access to water. It had to conform to laws that demand regulation and hierarchy, was shaped by the need to regulate within itself the management of access to water and other natural resources, and interpreted philosophical principles and ethics into rules and regulations governing land use and

infrastructure development. This kind of local, territorially-based co-operation around resource use seems to necessitate some form of structured bureaucratisation.

In combination with the conformity to the Companies Law legislation necessitated by the choice of a Section 21 company to own the land, and the interpretation of permaculture principles in such a way as to provide rules to govern interactions between people and the land, and the resource management strategies described above, the project appeared to become increasingly regulated and bureaucratised. Following the dendritic pattern of the water in a planning format that envisions the notion of a bioregional water management strategy based on planning and design, Mollison's million villages to replace the nation state suggests a scale of co-operation that necessitates the establishment of rules, regulations and rights, and their bureaucratization. A paradox between the ideals of freedom from control and centralised bureaucracy and realizing the widespread adoption of a planning approach to land management and social transformation through permaculture design and principles rooted in local ecological dynamics seems to emerge. Water access, the bureaucratising demands of the state's legal system; a desire from within to find a sense of harmony, belonging and balance and cooperate in a group to gain access to natural resources and live communally; appeared to necessitate the development of internal regulation as well as fit those imposed by the state.

Modern anthropology would argue that no society is untouched by the machinations of capitalism or isolated completely from global processes. What the above case seems to describe is a group of people professing a longing for freedom from a society seen as repressive, and from the workings of corporations and governments which they see to be limiting their freedoms of choice around basic human needs such as eating, or work, and withdrawing from an exploitative system that they did not wish to be a part of. In order to realise that, and share that possibility with others - through education and engagement - they had to access land which they could do as a group through a particular legal structure which they thought could act as a vehicle for realising their various individual and shared desires - and enact the permaculture ideal of self-sufficiency.

The process of acquiring land through the structure of the legal entity meant that the AZPI members had to fit their social constitution and land management plans to the legal strictures of the country and local municipal laws. Their project and initiatives, while intended to create a form of self-governance and alternative to centralised control, became increasingly defined by political laws. Yet, in that process, the members generated detailed knowledge about localised food production, land management and climate adapted household design.

In this chapter I have described how a group of mostly "white" South African youths who identified with a Western counter-cultural ecological discourse that resonated with their anti-establishment ethos during a transition from a "white" apartheid to ostensibly non-racial and increasingly neoliberal political landscape. They hoped to achieve their personal spiritual ideals and desires, and broader social transformation, through permaculture's philosophy that social change could be achieved by integrating human and natural systems, beginning with the individual, and following a code of ethics and principles with the end goal of achieving ecological harmony and balance.

What I have detailed here are the technical approaches and knowledge used and generated in the application of permaculture theory: house design, irrigation management, energy supply, garden design, earthworks and erosion control. This kind of knowledge might indeed be useful to people able to build houses and develop small-scale agricultural systems, and perhaps in contexts where human settlement is to take place. The way that the knowledge about the landscape and ways to interact with was generated (such as the understanding of watersheds and water supply, or the building of houses cognisant of natural energy flows) to manage the use of natural resources and facilitate individuals' access to those resources required in this case a level of co-operation and management, and a level of organisation that implied bureaucratisation of their social organisation. The social organisation that this permaculture undertaking – intended to realise ideals of self-regulation and self-reliance – brought about, was a decidedly hierarchical company structure that developed a strict and extensive set of rules and regulations, and a bureaucracy that ordered the activities of members, visitors to the farm and labourers. The organisational structure, developed partly in response to the legal entity chosen as the

vehicle for land ownership, also created financial demands on top of labour contributions from its members, thereby tying them into monetised exchanges with the company. Moreover, the project relied on external labour to see to it that the various technical interventions made by individuals and the collectivity could be realised. In this case, it was the labour of people most dispossessed by processes of colonialism and apartheid, and amongst the most disadvantaged by that history - "coloured" farm workers in a rural South African town – being put to work to realise the Western counter-cultural ecological ideas and ideologies of a group most benefited by that history: the beneficiaries of a white colonial heritage like myself, but which they could only participate in as labourers.

In the following chapter, I bring to the fore some of the contradictions and tensions that emerged in the attempts to bring about social and ecological harmony through permaculture by this group of mostly "white" South Africans in a marginal rural context. These fundamental incongruities between the universalising ideals of permaculture theory that draw on the authority of ecological science and romantic notions of the natural lore of traditional societies as a means to achieve social and ecological harmony, and the legal, social, ecological and economic context within which they were enacted come to the fore in the tensions and anxieties that emerged in the way that participants described their experiences participating in this initiative. They raise questions more broadly about environmentalism as a social movement, and around justice as a dimension of environmentalism particularly in South Africa.

Chapter 8: Contradictions and Paradoxes in Permaculture Practice at AZPI

Permaculture philosophy maintains that alternatives to the destructive dimensions of global capitalism can be brought about through the global adoption of ecological design methods and a set of ethics and principles by individuals which should allow them to integrate their settlement and production practices with natural patterns and processes. In theory, collective adoption of these ecological design approaches and ideas should generate a different kind of world to the kind imagined and enacted in an unequal system of capitalist economics. Permaculture theory calls attention to alternative forms of exchange that can provide an alternative to the money economy, and introduces a different way of thinking about energy exchange. It rests on ideals of self-sufficiency, self-determination, co-operation and decentralisation, and a desire to escape from and create an alternative to the global system of capitalism. The case study presented here tells the story of a group of mostly "white" middle-class South Africans who adopted permaculture as an avenue for addressing ecological concerns, and saw it as a response and alternative to the authoritarian regime they grew up in, as well as a means to realise their personal aspirations for self-realisation and to see to their own basic needs, such as having a home and growing food. They established homes and infrastructure, and engaged in land restoration activities, based on their ideas about permaculture and their own ecological research in an arid, rural area on an ecologically degraded farm. For many of the participants involved in this initiative, applying permaculture was a means to realise the goals of self-sufficiency, and address social and ecological injustice at the same time. For others, it was a way to get out of an economic and social system that they did not feel that they related to, and a means to live a different kind of lifestyle free of the demands of the industrial economy, realise their spiritual goals and be closer to nature.

As indicated in the previous chapter, this group of people who tried to realise the ideals of permaculture, philosophical and material, experimented with a range of permaculture design approaches, low-cost ecological construction technologies, and agro-ecological food production. With the assistance of labourers and volunteers they built their own homes, developed gardens and infrastructure to supply their basic

needs. They generated knowledge about their local environment, about resilient edible and indigenous species that grew successfully in that environment, and shared this knowledge and the resources generated on the farm among themselves, visitors, labourers and neighbours. In the process, they developed an extensive bureaucratic and managerial system to manage the infrastructure as well as social relations between members. Additionally, they included a system of financial contributions that bound the individuals into the cash economy that permaculture is imagined as creating an alternative to. In part, these features of the group's organisation were a consequence of the legal vehicle they chose as a means to access land collectively, municipal legal requirements, and in part they were a result of the way in which the group interpreted permaculture ideas and translated these into rules which they could refer to in their ecological and social engagements. The group, or company, moreover employed "coloured" wage labourers, farm tenants living in the vicinity, to assist in developing their individual homesteads, and the farm infrastructure, and thereby tied their efforts more closely to the capitalist economy they sought to break free of and bound themselves more tightly into a dependence on cash income. These various dynamics that emerged in the project's unfoldment point to some fundamental incongruencies between the ideals which the group and individuals hoped to achieve through their development of the project and their sites, and the actual strategies that were employed by the group. They suggest a dissonance between the ideals of freedom, self-sufficiency and self-realisation, and the demands of co-operation and collective resource management, the actuality of operating within a particular legal, economic and political framework that shapes those efforts, and the need for both cash and external labour to realise those ideals. As shall be shown, a further dissonance emerges between the aims of creating an alternative to apartheid authoritarianism and capitalist injustice, and generating a global utopian village of self-sufficient abundance that this group sought, and the particular kinds of social relationships that were reproduced at this project – which I argue reproduce the cultural concerns and assumptions relevant to the predominantly middle-class white constituency of this group, as discussed in discourses about "whiteness", in South Africa in particular. In subscribing to a universalising discourse of global social-ecological integration through individual application of ecological design, as a means to achieve ecological and social harmony and resist the strictures and structures of global capitalism, like "rainbowism", this group seemed to reproduce a

colour-blindness that took for granted their own positioning as being economically and socially capacitated to engage in the ecological discourse and practice of permaculture, central to which is land access. A second feature of this case study emerges: that in engaging with the ecological practices under the umbrella of permaculture, and in creating their own set of regulations to fit with their ideals and also with state legislation, the organisation began to resemble a form closer to the system of hierarchy they were seeking an alternative to, and enacting a form of environmentality (Agrawal 2005).

These contradictions between the ideals and aims of the group and the legal, political, social and economic dynamics with which it engaged emerge in the narratives surrounding how the individuals involved experienced their participation in the project. These narratives reveal the tensions between the desire to be independent, self-sufficient and free and the need to co-operate and co-manage in order to realise those goals, between the desire to break free of capitalism and industrial society, the inextricability from the economy, the financial demands and labour requirements of the enterprise. Certain silences, omissions and moments of awkwardness and tension reflect on the colour-blindness of the permaculture discourse, and the contradiction between this group of white South Africans privileged by their historical positioning through colonialism and apartheid pursuing goals of self-determination, ecological and social justice and resisting global capitalism, and the employment of "coloured" labourers dispossessed by that same history.

In this chapter, I draw on the evidence and arguments presented in the previous chapter, and focus here on the ways in which the people involved in this permaculture initiative in South Africa experienced trying to realise their personal and environmental ideals through the doctrines of permaculture. In particular I look at the ways that the project shaped itself around natural resource management and access through a system of communal management and by the laws and by-laws imposed from without by South African law. I also look at some of the contradictions that emerged in that practice, particularly between the ecotopian goals of self-sufficiency, and the enmeshment in capitalist economy where the need for cash was inevitable and the need for labour inescapable. These factors, as shall be shown, raised pointed questions about this utopian pursuit that sought to change the structure of global

capitalism which took earth care as a universal that superseded race and class in the South African context where these two social dynamics were fundamental.

Ideals, Visions and Realisation of Community in a Permaculture System

For a number of the residents, it was the social interactions that grew out of their efforts to develop self-sufficient settlements and realise the ideal of human-ecological integration through the application of permaculture theory they most enjoyed. These interactions generated for the participants a sense of value around knowledge sharing, personal growth, the realisation of their ideals, and a sense of spiritual fulfilment they associated with being in close proximity with natural systems.

Duncan celebrated the people involved in the project, and felt that the work they were doing was important. He was excited about the development of the project over time, and the people within it. He said, “It has been an unbelievable journey. There has been so much evolution since KwaZulu-Natal, and now at Pypsonderwater. It keeps continuing … They are magnificent, clever and solid people to be around … Some of the finest people are at Pypsonderwater. It is potentially the most interesting place in South Africa, what happens there. And South Africa is the most interesting country in the world. We’re on the edge, out there with anyone in the world. It is not that everyone has to do this, but people visit and they can’t handle using a long-drop or mud huts. There are prejudices, it is seen as an archaic stone age life. My family doesn’t understand it. They think I’m crazy.”

Fourie expressed similar sentiments, saying “I want to bring it into art. I want to live here. I love the people, the space and what we do. You have one life and can be more than one thing, and sometimes people want you to stay the same. You can be into many different things. I love our peculiar balance – like from fixing the long drop crapper and then going to a red carpet event in one day. I love that.”

Scheepers emphasised the sense of connection between people and the natural landscape. She explained, “Pypsonderwater is a smaller community within a bigger community of people who share the same values. In the city, we don’t get to

experience connection. You don't know the neighbours, if your house is broken into, no one checks up. It has been a profound experience of connection ... It is a more free lifestyle. I still struggle with it. But the whole day is not caught up in someone else's world, you can choose how you manage your time ... There's a wealth of knowledge here". She said that she was living a healthier lifestyle, using herbal remedies, and spent less money on doctors. But she also recognised that it took time and effort to realise these benefits, such as waiting for fruit trees to grow. She added, "When you live here you live a permaculture lifestyle. You get power from the sun, harvest and share energy by pickling stuff, save seed, when you sign up here you know that's what you're getting into. I experience it as an underlying thread rather than an overarching paradigm."

For Stoller, the interface between the social and ecological dimensions of their efforts was clear, and she embraced the challenges that emerged. She said that she loved the teamwork,

> And that things are a continuously evolving ecosystem - the garden, home, relationships. I love how what we do inspires people and generally inspires them into action … I love the quiet and the nature and immense changeability of seasons. And the challenges this presents around food self-sufficiency and trying to create as many non-technological or rather appropriately technological solutions, the increasing independence that we build here - the garden, foods etc. … I like people dynamics, I'm fascinated by them, and knowing that what we're doing in permaculture is reintroducing internalised value and working with permaculture systems, buildings and gardens. You set living systems up which then have a life of their own and you have the opportunity to interact with, you're not in control of everything … I love growing this diversity of plants, food and non-food - like the loofahs and the gourds. And that we're here to look out for each other. How we try hard to accommodate each others' differences - diets, beliefs, practices.

She added that one of the major benefits of being involved with the project with other people enabled her to access land, explaining, "Because of the collective we are able to, through our company, acquire this land which we could not do as individuals.

Through pooling resources we could access this training space. Interacting with a diversity of people, thoughts ... And ways of doing stuff."

Others emphasised the personal growth they experienced through their interactions with other members of the project and their engagement with natural systems. Cartwright for example told me, "I have grown as a person, being in community. There are a lot of mirrors and emotional stuff comes up. This doesn't happen in an urban context, where there is no shared vision with your neighbours. It varies - some benefits are more prevalent than others. It is nice to have a place like home, and at other times it is good to feel that 10% of my salary is going to [the project]. The challenges are similar [to the benefits] - facing your shit, and finding context in community. Off-site - it is different to the life that I lead".

Akin to Cartwright's experience, Henks emphasised his own personal growth as a result of living in this community:

> I'm fighting with responsibility - you can't just leave things. I always kept myself very independent, it was a self-sabotaging mechanism. When things become difficult, I move on. It is a place of expressing creativity, but I am still confused about how this all became, and it is odd that I am here with this. I am happy with this, but still resisting a sense of ownership of the exploits here. It woke me up and I have tremendous gratitude to experience it … I've had profound experiences getting salad from the garden, versus buying it from a shop ... We are the best of everything, we become caretakers. I've had huge spiritual realisations of the positive effects of man on nature, that are a thousand times the negative ones. If some people are taking care, the planet would turn around. The reason I support permaculture is that it is complete, it is a system that works … I am part of the diversity of the community, and there are benefits to that. I have experienced personal growth here, and am learning skills. There is so much to learn, about tools, maintenance and labour. Everything you do has an impact.

Likewise, I was told by Solomons, "The life here is healthy with regard to my goals for spiritual, mental and physical evolution. I feel that I am evolving in all areas of my

life. It is an amazing home for my family, and I am able to fulfil personal desires. The community fulfils my need for togetherness. There are different ways to contribute to the circle, you can't just leave it up to others. I am understanding that every bit contributes to the whole … One of the biggest things I've learnt here is that patience is the best virtue."

The personal enrichment experienced by these individuals led some to feel a sense of spiritual fulfilment too. Henks, for example, recounted his shift in perceptions about "nature" as a result of his involvement on the land and with the people: "At first it was more childish, like 'I'm in nature now' - a very city point of view. It is taking time. But now I've been here longer, and something else happens. It is a place to be myself and explore. It has shaped me. Now I am hanging out *with* nature, but I am more realized than ever. The systems are in place ... It is my ultimate home. There is no place I would rather be. If I could take the place with me I would … Nature is pure intelligence, it is spirit. If you want to feel abundant, you must feel nature, it is abundant ... You can't deny nature here, like the breath. Consciousness will burn away limitations of what life is, they will be rectified. I thought I'd lose myself, but the day to day routine of interacting with nature ... Also the fact that you can work, but it is the daily interactions. People don't have a realisation of what nature is, they are part of the rat race."

Duncan expressed a similar sense of the way that he was influenced by his engagement with the land: "At Pypsonderwater we have two ecological environments, and it displays the characteristics of both, and it allows for more magic, alchemy. The edge is best, like where the oceans meet the land. It is the Oneness … When you are there, you remember how magic it is. It is heaven, such beautiful land we're looking after. It knows that and will look after us".

In their enactment of permaculture design theory and philosophy – integrating their homes and livelihoods with local ecological systems - a number of participants in this project were able to materialise their designs for self-sufficiency and community living. In the process of engaging with natural systems in this way, respondents reported feeling that they generated a sense of community which provided a route for self and spiritual exploration, the generation and sharing of ecological knowledge.

These reports were largely framed in terms of self-realisation within community, and this was partly to do with the problem of how I naively framed my questions in terms of how participants felt they had benefited from their involvement therein. These reports nonetheless share with the permaculture discourse the primacy of self-transformation and the integration of human and ecological systems beginning with the individual homestead and radiating into communal living from there, to whole watershed-based management systems to broader social and ecological transformation. Further participants' reflections on their experiences being involved in the project revealed some of the paradoxes and contradictions inherent in their attempts to realise their personal and collective ideals which were tempered by the demands of co-operation and co-management of resources, and the actuality of living communally. The realisation of their ideals was further complicated by the financial demands of supporting themselves and the work on the farm, and making the project fit with the legal demands of South Africa's various policies that pertained to land use in agricultural areas.

The Squeeze of the Law: Shaping and shifting ideals of freedom and self-determination

Contradictions between the realisation of the individual and group's ideals and desires and the social and legal context they operated within emerged in narratives of ongoing frictions between the occupants of Pypsonderwater and one of their neighbours. The long-standing point of contention was the access road to the north of Pypsonderwater, which crossed a number of properties and provided Pypsonderwater occupants with one of the two means to access public roads and leave the farm by car. The other access was a road that led out the south of the farm, and crossed two other properties on the way to the nearest public road.

A family who moved onto the neighbouring farm after the group's arrival at the farm protested from the outset of their occupation the vehicles driving on the road that crossed their property. This led them to remove a pipe from their dam which supplied Pypsonderwater with water. When a second family bought the property, they too were frustrated with the traffic passing through their property, and a number of arguments

ensued over Pypsonderwater's occupants' rights to use the road.

The frictions that grew out from the growing enmities between the occupants of Pypsonderwater and these neighbours brought the project into a sudden but not entirely unexpected encounter with the political and legal system that property ownership implied. The neighbours pursued a number of routes to stop the Pypsonderwater occupants from driving through their property, and resorted to legal means, exposing the project to monitoring by government officials. The group had to ensure that their activities were compliant in terms of the municipal, environmental and water laws, and reshape their own land-use planning in order to realise their goals of providing education in sustainable permaculture practice.

The neighbours made a high court application to prevent the members of the project from using the road that passed through their property. This incident provoked a myriad of developments which fundamentally affected the operations of the AZPI, leading them to encounter a range of legal issues, some of which were expected and others not. These legal issues related to planning permission, water licensing, road access and zoning.

The members of the project had built their homes without prior planning permission. Collier elaborated: “We knew there would be problems. We didn’t submit building plans. We knew we’d have to deal with the buildings but wanted to get on with it rather than getting caught up in bureaucracy. We knew with good permaculture design we wouldn’t do anything that would get us into trouble, like break environmental laws, polluting rivers or being irresponsible. It was proven - the Green and Blue Scorpions came, but couldn’t nail us”.

The members applied *post-hoc* for planning permission, after hiring an architect to draw up the plans of the existing seven dwellings, which they submitted to the local planning department. Apparently, this would not change the “anti-profit motive” expressed in their constitution. The dam was also built without prior permission from the Department of Water Affairs (DWAF). It was retrospectively licensed through DWAF. In Stoller's words, “we were naively hoping to avoid that kind of thing and stay under the radar”. This was not to be the case. The dispute over one of the access

roads into the farm opened further legal issues for the members of the AZPI which severely hampered their efforts, and led to a range of tensions and stress for members.

The members had resorted to primarily using the road to the south, which crossed other neighbours' unoccupied land. The members went about researching the relevant laws, and put together a defence of their own. They also had to engage lawyers to assist them. They interviewed old residents in the area, and learnt that the road that led through Pypsonderwater had been in public use for generations. From these interviews, they collected 210 affidavits to support that claim. It was not uncommon in the recent past, in fact, to have members of the public drive through their farm from time to time, or to come across a lone cyclist before the gates had locks put on them. Relations between members of the AZPI and these neighbours became increasingly strained – the neighbours tried to reroute the road, and locked the access gates which labourers used on their bicycles. A number of unpleasant interactions were reported to me. Without access through this road, it became difficult for residents to leave Pypsonderwater when the south road was flooded – even when on one occasion, they had tried to fix it with 16 tonnes of rock. When the case was put before the courts, the AZPI won, through a "mandament of spoilation". However, these neighbours initiated an appeal against the high court ruling, and rallied the other farm owners to the south to dispute their road access on that side as well. A total of twelve formal complaints were issued, although Pypsonderwater had only four direct neighbours. The residents by this stage were exhausted from having to fight their own legal battles, and were unable to pay for a second court case. They had pooled money together for the first court case.

Eventually, the members of the AZPI capitulated and made an out-of-court settlement wherein they agreed to only use the north road for emergencies, and for labourers to cycle through for work. It was a difficult decision for them to reach, apparently, because it meant relinquishing one access point to their farm which could not later be revoked, and also devalued the other neighbour's property who also shared use of this road. Instead, they negotiated access through Mountainview, the neighbour's farm towards the north-west of Pypsonderwater. This required an application to the National Roads Agency. The road to the south remained in regular use, and was not legally contested.

In the meantime, the disgruntled neighbours contacted a range of government departments complaining about activities taking place at Pypsonderwater. They complained that the company was "expanding their ecovillage", "planting food forests", was a "crime vector" and had 17 dwellings on site. They apparently feared cattle and fruit theft from their property. The Department of Environmental Affairs and Development Planning (DEADP) issued a precompliance notice without actually inspecting the farm. Nine representatives from various government departments - DEADP, Department of Agriculture (DOA) and Water Affairs (DWAF), as well as the Green and Blue Scorpions, and the local department of planning came to inspect the farm, and found that all activities complied with environmental, health and water regulations. Collier and Stoller did a presentation about the farm and their plans to these officials. The DOA representative told them that their activities did not constitute "*bona fide* agriculture". One of the DEADP officials was initially not in favour of the farm's activities, but by the time he left the farm said that he was willing to put into writing that their operations were the most sustainable that he had seen.

The neighbours who contested the road access reported the AZPI to the municipality. They pointed out to the municipality officials that according to the zoning laws governing agriculturally zoned land, the company was conducting illegal activities by offering educational courses on the farm, and accommodation in the form of camping and the "backpackers". The residents had assumed that offering courses on agricultural themes was both desirable and legal – they didn't actually know that offering such courses was illegal because of their zoning. The municipality did not immediately take action, and the company continued to run courses. On the last PDC to be run there to date, in September 2013, the neighbours locked the gate on the southern entrance to the farm, preventing course participants and residents from entering or exiting the farm. By the end of the course, they had threatened the municipality with legal action if they did not serve notice to the AZPI to stop their illegal activities – which amounted to a twelve day course on sustainable living and food production, with up to 25 participants at a time. This caused enormous distress for the members of the AZPI. A Natural Building Course and practical permaculture internship were to follow the PDC, bookings had already been confirmed, and catering supplies bought. Together they debated whether to go ahead in any case, but

the directors took the final executive decision not to run the course, because they would have been held liable were any further legal action instituted against the company.

The AZPI had been planning to build a formal training centre, having until that point conducted most of the teaching in a room adjacent to the nursery, and which had been improved incrementally over the previous few years. It was to have a 12m x 12m footprint, and include a classroom, accommodations and facilities for students, and ablutions and a shared kitchen. It had been designed according to permaculture principles, and had been debated between members. Students on the last course had drawn up a design for the training centre as part of their course work, and according to Stoller, this provided valuable information and ideas for further planning by members.

The construction of the training centre was also dependent on the legal status of the project's activities. Prior to the complaints being laid by the neighbours, the company had already engaged in costly consultations with lawyers and zoning consultants on the rezoning application after finding the forms for re-zoning applications “incomprehensible”. They were advised to apply for a “temporary deviation” which would allow them to have the 8000 square metre area around the training centre zoned as “institutional”, within the farm's “agriculture one” zoning. The rezoning was dependent on the status of the road, which initially was in accordance with the agricultural zoning. However, the National Roads Agency indicated that there was unlikely to be major impact from the rezoning to “institutional”.

The rezoning potentially threatened the company's mandate. If the application were rejected, it would compromise the company's educational mandate and affect the future of the project, which in Collier's words was “born out of a desire to educate and provide a positive impact to South Africa and create an equitable and just society. Permaculture is a response to unsustainable agricultural practices that rely on exploiting land and labour”. The success of courses depended on their being able to offer affordable accommodation for participants, and it was a standard for PDCs to be residential. Furthermore, members felt that they were being criminalized in terms of statute laws without actually breaking the law or doing any harm by offering their

courses, and by offering solutions to challenges facing the country – such as rural depopulation, youth unemployment and degraded farming environments such as the one that they occupied. Stoller elaborated, “there are no opportunities for rural youth. They don’t want to be slaves on farms. We are responding to a real problem in South Africa. They don’t want to hear about the glorification of agriculture. It is unsustainable farming, tied to multinational dynamics and industrial agriculture. We are exploring alternatives in line with South African sustainable development policy”. Members further felt that they were an asset to the area because they drew people to the town, bought products during courses, and raised the profile of the economically stagnant town. It was brought to my attention that two reporters for national publications came to report on the farm in previous years.

The rezoning procedure entailed a number of steps. First, the company had to approach DEADP to ensure that they were not triggering any environmental impact assessments, for which they were exempt. They also had to approach DWAF to see that their water affairs – including the dam – were in order. Residents had to paint their roofs a matt green, and submit photographs of these to both DEADP and DOA in order to counter official's claims that their activities were ruining the rural character of the area – even though all the new dwellings were built from mudbricks and earth, like many of the historic buildings in the vicinity of the farm. According to the members’ understanding of the situation, the state departments’ principle resistance to the temporary deviation from agricultural zoning had to do with residency, rather than courses being run there. Collier remarked, “This project is about the transformation of rural spaces into integrative land use models where people can have regenerative and positive relationships with the land whilst being economically productive, and in fact contribute to rural beauty. Is the previous condition [of the land] land the benchmark for rural aesthetics? By regenerating ecosystem services and a wide variety of agricultural practices we will be able to provide a viable solution for other land users in the area”. According to this vision of the project's activities, the residents were improving the rural character of the area by engaging in sustainable land-use practices that were in accordance with South African environmental law.

The rezoning application required meetings with government officials. I attended a meeting between representatives of the AZPI, the zoning consultants and government

officials. The representatives were presenting their development plans and letters of support from international permaculture practitioners, academics and course participants to the officials.

The AZPI representatives explained to officials what they were doing on the farm, and that they had bought it bankrupt and destroyed, and had transformed it through best practices of sustainability. They explained that it was of international significance, and part of an international network. They emphasised that it was imperative to have accommodation on site for course participants and to have lecturing spaces on site, where the models of permaculture practice were. Collier explained to them, "The classes are integrally related to the environment and practicals interacting with models found nowhere else in the country. It is permaculture in a dryland context". It was not possible for them to teach without the models, which were centred on the homesteads of the residents. The AZPI representatives also emphasised that it was not their plan to grow an ecovillage as feared by the neighbours, but to provide models for others who also wished to live sustainably and self-sufficiently, in accordance with the law. They admitted that they had made mistakes, and said that they wanted to rectify them.

The principle concerns that the officials from the various departments raised related to including a usually urban function (an institution) in an agriculturally zoned area. Firstly, they emphasised that the activities on the farm had to conform with the law, such as getting EIAs for building gabions that used over 50 cubic metres of rock (which amounts approximately a cube of 3.7 m on each side). Secondly, they said that they needed to consider the worst case scenario, and expressed fears that if the company sold the farm, that the buyers might take advantage of the institutional zoning. Third, an official from the Department of Agriculture suggested that it was not necessarily in the department's interests to pursue or accommodate their model: "We need to think if we want this reproduced. It is not favourable to agriculture … We don't want to see these kinds of developments happening all over, even if you think you're helping the farming community … We don't have to buy into your model. Why should we?" Of great importance to the state representatives in terms of the rezoning was the status of the road, that it was legal for use with increased volumes of traffic. They seemed to struggle reconciling the educational activities that centred on sustainable agricultural practices, and agricultural activities alone. They

said that the AZPI members needed to clearly differentiate between agricultural and educational activities. The representative from DEADP struggled to reconcile the ostensibly sustainable agricultural and lifestyle practices that aimed overtly to be integrated with natural systems, with maintaining a "green" and appealing environment. He said. "It draws tourism – nature", suggesting that he thought that their activities did not fit with what were seen from the department's perspective as activities that promoted nature conservation or ecological management.

Stoller found it intriguing interacting with the government departments in that different departments considered only certain aspects of the zoning laws which fell under their mandates, be it agriculture or environment. She noted a lack of integration between departments, and moreover that the relevant laws were well-intended but gave little attention to context, relevance and appropriate interventions made by the project on the farm. She said, "the project doesn't fit established categories, making it difficult to understand and what we are doing from a legislative perspective. Their definitions are limited and if you don't fit in them they don't know what to do".

The legal cases – rezoning, planning permissions, water licenses and court cases over road access – proved trying on a number of levels for the members of the AZPI. They incurred costs and much energy to research the law, and engage with lawyers, consultants, and government officials. This put financial strain on individuals and the group as a whole, which already faced difficulties earning an income from the farm. They exacerbated already complicated social relationships. Moreover, the need to comply with zoning laws affected the realisation of the farm's vision, and shifted the management priorities for the project and the land.

When the AZPI was ordered to stop running the courses, income streams from the PDCs, Natural Building Course (NBC) and internships came to an end. This meant that the little income which farm members made twice a year was no longer available. In addition to losing these income streams, the members also had to contribute to legal costs.

For Van der Zandt, this meant having to leave the farm. She had previously been paid through a Cape Town-based permaculture organisation to establish food gardens at a

local school, and worked seasonally at a lodge in Knysna. This work dried up, however, and she had hardly any income since the courses were brought to an end. She said, “What do we do, all of us?” She left to help friends living in Wilderness, about 200km away, set up an aquaponics system and manage their chicken enterprise. She told me, “I was sad to leave, and have been for a while, but I'm ready now. But also quite confused, and a bit what the fuck and I’ve just built the house and I can’t live here. When can I live here? How do I live here with no income? We all need it, but it is hard to earn money in [town]. I didn’t know when I came how I would make a living. I was going to see”.

When the courses were called off, Petersen, who co-taught the natural building courses on the farm with Boom, started another business offering natural building courses at other locations, while the affiliates on the farm building courses were left without courses to teach. Smith felt that although it was the plan to build his own house, he would be unable to do so until the legal issues around zoning and road access were resolved. For Collier, their activities did constitute “bona fide agriculture”, and were in line with agriculture policy's sustainability focus.

Conforming with zoning laws had a number of physical and planning implications for the project as well. It meant that only three units could be built as labourers cottages, and one manager's house, in addition to the extant seven. The labourer's cottages had to be clustered, which also changed original plans for more dispersed residences which preferably did not have each other in sight. This limited the number of LCs to thirteen – eight fewer than the original twenty-one. The plans for co-housing, one form of membership ratified in the constitution, had to fall away. Initially the idea was to allow residents to use the accommodations in the training facility when there were no courses, but this was against the zoning laws. The limitations on the number of dwellings that could be built on this agriculturally zoned land not only restricted how many of the existing shareholders could build their own homes, but also affected any possibility of accommodating farm labourers there that the shareholders had entertained.

Moreover, the training facilities which had initially been planned to be located to the east of the nursery had to be moved to prime agricultural land, and to include the

nursery, goat shed and agricultural terraces to the west of the main house. This was because they were at first going to be located too close to a drainage line that was marked on official state maps. According to NEMA laws, no building could be located within 32m of any marked drainage lines (streams or rivers). Moreover, indigenous vegetation was not allowed to be removed, although this area was largely denuded from previous goat grazing, and occupied by less-valued pioneer species, such as *Euphorbia mauritanica, Galenia africana (*kraalbos) and *Drosanthemum hispidum* that indicated disturbed and degraded ecologies (Esler *et al*. 2006: 186-7). However, according to NEMA laws, land which had been out of agricultural use for more than ten years had to be managed in accordance with these laws. This was disappointing for the project, because they had hoped to grow on the old agricultural terraces where they were compelled to build.

The zoning application was finally submitted at the beginning of 2015, and by October that year they received confirmation that their application had been accepted. Courses had been suspended for two years by then. Members had left the farm to earn an income elsewhere, and the number of visitors and volunteers dropped off. At times, there were just two households permanently occupied by members, and there was little manpower or finance available for maintaining infrastructure. According to members, the neighbour's “slander” had damaged the project's reputation, and it became widely known that courses were no longer being run from this location. When news arrived that the application was successful, members realised that they needed to begin tending to upgrading their facilities, and they could begin fund-raising for the new training centre. With the water rights for the dam registered, along with support from the amenable neighbours, many of the water issues had been resolved, and they could begin to look at expanded agricultural production. The reservoir (weir) supplied 150 million litres of water a year, and the dam was to supply 30 million litres. Registration of the dam, which was built in 2009 and planning permissions for houses since 2009 meant back-payment of rates from those dates to present.

By this stage a number of members had left the farm to live elsewhere, whilst some still left intermittently to work. PDCs and Natural Building Courses were being held at other locations (Spain, at members' farms and residences, at backpackers and other ecovillages). With the small number of residents and visitors, the farm had not been

maintained as it previously was. As a consequence of this range of dynamics, it was to take some time before courses could once again be offered on the farm.

The members of the AZPI since 1999 had managed to install an irrigation supply system, and negotiate water and road access with their neighbours which allowed them to develop food production systems, engage in land rehabilitation, propagate seed, provide education and develop their own homes. Coming into contact with South Africa's legal requirements around land use and harmonising their activities with these laws meant that they had to change their land management plans and activities to fit with those laws. What transpired in the process of instituting management systems and fitting with those laws was a more regulated internal system of regulation and centralised management that stood in contrast to the permaculture ideals of decentralisation and self-governance. Increasingly, the project was shaped by legal and economic dictates and began to resemble more closely the kind of regulated, law-based system they were trying to create an alternative to.their ideals were also shaped by their need to cooperate and co-manage the natural resources necessary to bring their vision for human-ecological integration and rural regeneration into being. The dissonances between the demands of the law and cooperation and the project's ideals that drew on permaculture and individual's desires for self-determination and realisation emerged in their narratives about the conundrums they faced in that engagement. The tendencies towards centralised management and hierarchical structure generated through engagement with the law, economic demands and natural resource co-management appeared to be reproduced within the social dynamics of the group as well.

Capitalist/Communitarian Dissonance Emergent in Permaculture Practice

Another set of contradictions that emerged in the previous chapter between the desire to create self-sufficient, independent systems of production as an alternative to capitalist relations of production and dependence on the money economy, and the need for cash and labour to realise these goals of self-reliance through the application of permaculture design. As described earlier, the company or project bound participants into a system of annual cash contributions for the development and

maintenance of farm infrastructure, and the employment of labourers to assist in that pursuit. These dynamics emerged in participants narratives that revealed anxieties around their economic survival on the farm, and in their activities that drew their energies away from the project and into seeking out a means to support their lives and activities on the farm.

Interviews with a number of the members and ex-members revealed that making a living on the farm, and in the area that it was located, was one of the major challenges to realising the ideal of self-sufficiency through permaculture theory and practice. This issue was compounded when the courses were stopped. Difficulty earning money from this location – where most members were engaged in food production mostly for their own homes, with some excess to share - was, however, an ongoing theme. The water challenges had rendered the members unable to develop more broadly into the drylands agricultural systems that were planned for the farm, and which could generate an income stream. This challenge meant that most of the permanent residents had to leave the farm to earn money. Stoller, for example, spent about half the year away teaching elsewhere, while Boom would remain on the farm to take care of the house and garden systems. Similarly, when Boom got work on building projects, Stoller was compelled to stay alone on the farm. As a consequence, only one was able to earn money at a time, and they got to spend only a little time together. It became difficult to leave the farm for members, because they would need to find people to take care of their homesteads, and keep the plants and chickens alive.

Davids shared a similar sentiment, saying that “Money is a challenge, to make things happen here. But the challenge is not here, this is easy. It is generating the funds to be here and convince my wife to come out here.”

For Scheepers, the economic situation was exacerbated by the farm's distant location from metropolitan centres, like Cape Town which was 350km away. She explained, “it is just too far from Cape Town. [This] is a small town. If you want to do or start something, you have to go to the city. There is no haberdashery in town. You need a good reason to go to the city, with a long list. So you have to wait for opportunities, when time and money collide.”

Similar issues arose for Hewitt, who told me: “Pypsonderwater was presented as a training centre and a permaculture model, and it was not economically viable for me. It needed high through flow of traffic. So the farm had to have demonstrations, food forests, water systems, so people could be inspired and learn and take that home. It was not an actual agricultural or business project, doing agriculture and value adding. That was not the focus at Pypsonderwater.”

Cartwright, a member who lived off the farm, said that her “soul purpose is to create conscious media. It requires interacting with a wider network and different sources of information, and having other experiences. It is also financially challenging … It is strange because I have no extra capital and am forced to stick with my profession and push the limits in an urban context. I just want a little *pondok* to write, where I can hide out. But I have no site or house”. For Cartwright, then, the farm's distance from centres of activity as well as the limitations on generating income made it difficult for her to live there. This was compounded by the related issues around zoning ordinances which prescribed that only a certain number of dwellings could be built on the farm, and she was up until that point unable to build her own place nor access the envisioned co-housing facilities.

An additional issue raised by an ex-member with regard to engaging with a permaculture-driven lifestyle was relinquishing what she called “middle-class baggage”. She explained, “Simplifying one’s life does not have to be in a desperate way, like the world ending, but in a gracious way. Nature is so abundant and rewarding. Our self-conversations are so important. That’s where it begins … I was feeling that you can live simply without poverty. In western culture, you need to buy the stuff to show you’ve ‘arrived’ to be anyone - a job, a house, family. There are so many ways to do things. It took a long time to be okay with not going to work. I realise my work is at home with my kids. I felt guilty”.

Given that the members of the farm were not fully self-sufficient in terms of growing all their own food, making their own clothing or shoes, and needed to buy equipment to realise their dreams of self-sufficiency, and a continued dependence on petroleum products as well as labour, they needed to earn money. They were unable to see to all their financial needs just through activities on the farm, such as courses or seed-saving.

As a consequence, the degree of self-reliance that they were able to attain was severely handicapped. For one ex-member, this was one of the major weaknesses of permaculture thinking as a whole, and the project in particular: “the economic realities and social challenges are often the biggest: decision-making and leadership … One of Pypsonderwater's weaknesses was naivete, the economics of the undertaking … Many still go elsewhere to work. It is false, it is a lie.”

Fourie explained that some of these financial challenges spilled into relationships between members as a result of financial stress. These financial challenges meant that members either could not live on the farm, or they had to leave the farm to make money. Fourie described a circular effect, where members who were seen to be inactive were pressured to leave. As a consequence, there would be less financial inputs, leading to greater social stress. These kinds of tensions that emerged – changing priorities and financial duress – were linked to tensions within the group. And, as decisions had to be made in response to such challenges – including water and legal issues – further social tensions emerged.

From the historical accounts of the establishment of the farm, it appeared that the first members were quite idealistic, and initially there was a broader vision for the farm than just a permaculture training centre. Moreover, as the project began to encounter the reality of realizing their personal and shared goals, challenges - such as those presented by poor water access, and later the legal disputes over road access and zoning - began to shift the priorities of the project.

For one of the original members, it was the social dynamics that presented the greatest challenge to the project. They explained, “the social thing has been the most challenging versus all our challenges like water, the legal cases. And the lack of positive integrated solution finding ... I’d think we’d need to look at people’s strength in our diversity but it would get distilled to what was on the land. I saw this as a narrow approach to permaculture: one of the biggest challenges or stumbling blocks here. We’ve had incredible knowledge lost. Partly that is why we progressed slowly, we keep losing people and institutional knowledge. But I don’t believe everyone shares this idea … As much as we are a permaculture community, we lack permaculture on an emotional and community level”.

In spite of a consensus-making decision process ratified in the constitution, some of the members felt that they were not included in decisions made over the farm. A number felt that when they had ideas for the farm, they were shot down or "bulldozed", or would be "bullied" into agreeing to decisions that they did not necessarily support. Some of the members felt that this sense of domination and exclusion from decision-making led members to leave the project.

Personality clashes and dominant personalities seemed to be one contributing factor to social tension in the project. This was raised by a number of interviewees. On the one hand they recognised the tendency towards domination, but on the other recognised the value of strong leadership. I was told, "There needs to be a leader, but at the same time everyone needs to feel empowered." A number of participants felt that the right sorts of decisions were taken in the long-run, but the way in which the decisions were made was not ideal.

According to other members, tensions emerged around issues of those who lived on the farm, who perceived themselves to be doing more work than those who did not live there permanently. The terms used to describe members who were less active were "moribund" and "dead wood" that had to be "cleared away". On the other hand, some of those who lived off the farm felt that they were making financial contributions to a project in which they had little say.

Boom identified this tension between the legal structure of the company and the desires for community and egalitarianism amongst the participants of the project. He said, "On one hand we're a project existing in structures, a company, and also a community, and these are not the same. The community is more about caring for people, but there are mandates of the company. We should be more helpful and kind rather than condemning. The community is much broader than the space. We need to try to understand people's problems".

The paradox of seeking out self-realisation, self-determination and escaping the apparent trappings of industrial society, and the kind of bureaucracies and organisational structures that needed to be developed in order to cooperate to

co-manage resources needed for the project's development of permaculture models and to conform with the legal requirements around agricultural zoning, environmental laws and company laws, were apparent in the ways that participants in this project described the challenges that they faced both personally, and in terms of realising their goals of communal self-sufficiency.

Fourie expressed the difficulties they experienced in the following way: “There was a mentality you had to prioritise the farm regardless of what it costs you. I bought into freedom, before permaculture, and the landscape and this represents being free. So I find the rules and the blame game very hard. I didn't expect to find that here. We are shifting, it was hard core.”

For two of the members, adapting to living in a communally-held space tested them. Henks explained, “Initially I was overwhelmed by the pressure of being in a community, I didn’t take it seriously. I had to make my actions follow my words. It is easy to talk. I’ve learnt a lot of humility … The challenges here include not getting caught up the personal needs of people, like feeling inadequate or like you don’t know anything. Being here has shaped who I am, before there was no target, only exploration. This is the discovery and has become the inquiry. I probably won’t ever do this again.”

Solomons had similar experience of finding it challenging to adapt to working and living with others. She explained, “I got quite a shock when I moved to the farm, and realised that it was an organism. I realised I was not there alone, and could not make decisions alone. I was in a relationship and in a community”. In the beginning, the challenges superseded the good feelings of her experience on the farm. She told me, “I did the Pypsonderwater journey, and as for anyone, there were disturbances to my reality - financially, emotionally, it could be unpleasant. The climate here is intense, and we put that on the application forms. It is not an indoor reality like in the city where you are buffered from conditions … not knowing how to contribute without having had any experience. I was focused on my personal reality at home. Not getting my own way and having to accept that … I was very resentful and I took a lot of strain in my personal reality … One of the biggest challenges involves the principles – and one of the most important things is not taking things personally.”

Scheepers found that the intensity of social interactions could become quite exhausting. She said: “We need to look after our own space. It is a good challenge, and you need to be very present, like in meetings, you need to connect with what you think and feel and articulate that. After the general meetings, everyone is exhausted. You need to be present. You can plan your day, but things often come to you. You can get upset or you can keep going.”

The perception that they had little influence in decisions taken at the farm, the stigmatisation of those living off the farm, in combination with rising financial commitments led other members to revoke their membership. Others, yet, became tired of the complexity of launching a community based on permaculture principles. Howitzer said, “It was the focus of my life to be part of this intentional community and environmental stuff but I had to work very hard to survive. I realised what we were attempting was like reinventing the wheel. It was a complex and tiresome task. I got tired of a lack of social progress, on the relationships, decision-making and leadership style and inability to resolve conflict”. They further felt that the approach taken by this project was “exclusive”, “judgemental” and “alienating” because, to this interviewee, it was an approach of “we know how to do it”. They said, “There is little interaction with the local community. After 15 years no one is trying to copy the model. So Pypsonderwater failed according to their own vision which took a while to consolidate. To be a model and a living space to live the life - a model of sustainability, what we understand as sustainable society”.

For some of the members, it was the remoteness that challenged them, and the difficulty earning money at the farm. Barnes said, “ I need more people. The location is too remote. I had a child and a wife, which drew me away. I may not have left. But I need more people. I’m a permaculture restaurateur. I need enough people to sustain a business. I could make money on courses, but not sustainably throughout the year”.

Hammersmith found it challenging to be far from their children, but expressed a deeper sense of dissatisfaction with the unfolding of events at the project. They remarked that, “In the end it was a culmination of things. It was too far from my kids … there were high levels of stress at Pypsonderwater, and I was not getting

satisfaction with the realisation of my dreams. I felt my dreams were not so aligned with the new reality. Each new rule was a bit further from what I had hoped. I liked Pypsonderwater's obscurity, but with the neighbours and the government officials, we came out of that obscurity. I was not in a financial situation to chuck thousands at it, it was taxing. It was more than I had available to me."

A third previous member also found that the farm was too far to make regular trips, and it was not set up in a way that was conducive for income generation. Moreover, they felt "a bit driven out, not personally: there was a strong move to 'cull dead wood' of shareholders: they wanted residents. And it wasn't handled well. The criteria presented were that of off-site shareholders who didn't contribute to day-to-day activities - we saw ourselves as a problem and there was the distance to travel. These were the culminating factors for us leaving … Others were upset … It came down to certain relationships working, and others not. We weren't upset when we left. It was a level-headed, considered decision, and we thought it would be good for Pypsonderwater." However, they also said that they had been asked to leave in the context of some members trying to ensure permanent residence on the farm, although when these members had joined the farm, it was never their intention to live there permanently. They explained, "They needed shareholders who could pay for the shares, and pay the levies and do the work parties ... But it was difficult to split our time and energy between two places, and our business was just taking off so it made sense for us to withdraw".

Stone had been asked to leave the project because he was in arrears with his levies, which according to the company's constitution, was warranted beyond a certain period of time. This happened shortly after he had bought shares in the company, and had just moved to the farm to begin planning his site. While assisting in the building of another member's home he injured his back, incapacitating him for months. He left the farm to stay elsewhere, and was not in contact with other members, did not attend an AGM and did not pay his levies timeously. Other members sent them a letter to notify him of their arrears, and the decision to ask him to leave. Stone was nonplussed about the way he was asked to leave, because he was in a difficult time of his life, with an injury and without any income. He felt that he was not given the opportunity to state his case, and appeal for an extension or respite on his arrears.

A few of the members felt that the exits from the farm weakened the project, by reducing the diversity of experience and knowledge which they had to offer. One explained, “The conflicts had to do with aims and goals, where the emphasis should be, especially on the allocation of money. We were trying to create diversity, with artists, computer boffins, all walks. Some felt that there was a permaculture clique and their vision and needs were ignored. This resulted in the stronger personalities clashing, not just on these issues, but also personality clashes”.

Duncan’s reflection on the the difficulties the group faced in trying to realise their ideals and goals captured the paradox between their ideals of self-realisation and liberation from the strictures and destructive dimensions of capitalist industrial society, and the project's adoption of state laws and development of its own regulations that accompanied their need to cooperate: “There has been discontent, there will be in a group. It is not just a free love commune. People think there are no rules, that is not true. There are the laws of the land, the zoning, and we have to set up our own laws. In suburbia, there are walls, we are disconnected, there is no need to interact. But we have to interact. It will never be finished, it is a work in progress. Thrash out agreements, ugly disagreements and enmities. It has not been easy on a social level. There is always some crisis, it is ongoing. It requires work on every level. I don’t always get it right. I’m not so strong as others on the farm … I’m not perfect, but it has taught me a lot about life.”

This combination of factors - the financial demands of the company, developing their own sites, and seeing to their own needs; the interpersonal relationships and feelings of being pushed out or not included in decisions; the anxieties around needing to work on “social issues” and cooperate as a group; and the increasing regulation and restrictions of freedoms led a number of members to exit the project.

For the members of the AZPI that remained involved in the project at the time of writing, in spite of the enormity of the difficulties which the members faced in dealing with these legal issues, the process of being legally compliant and also carving out a space for themselves in the policy frameworks that governed land use in South Africa, these developments were generally seen as a good thing in the long run. As a model

permaculture training institution, they were shown to be upholding the law. The permaculture facilitators felt able to advise others on courses about policy compliance. Petersen explained, “Although it is challenging, it seems like a big hassle now - brought on by the conflict with the neighbours - it is actually better for the farm in the long run. We would have needed to register anyway, and it means we’re ahead of our game”.

Although many individuals had passed through this project as members, they did not entirely forsake permaculture ideas and practices. And, those who remained in the project did not limit their activities just to the farm. In many ways, the notions embodied in permaculture theory and practice remained important to them, albeit under different names or in different forms. Many continued with their lives and work in a way that still expressed the values and ideals set forth in the permaculture discourse, which the AZPI was aiming to realise.

Smith and Fourie, existing members whose work focused on acting and theatre, tried to bring permaculture into it. Smith told me, “I find it incredible how many people I could reach with my work with the philosophy of permaculture … I wanted to do a permaculture facilitation … I did the facilitation module for one of PES’s accredited courses. So, I could enter permaculture at a different level. I’d be foolish to think I’ve got so much permaculture practical and design skill, or building.” Fourie added, “and the themes about nature, in our plays sneaked in without being the focus of the play”.

Hammersmith, who had moved away, maintained an interest in food production. When I interviewed him, was making efforts to grow the Peer Guarantee System (PGS) for organic producers in Swellendam.

Hewitt was also involved in setting up cooperatives to link food producers, distribution systems and consumers, and he and his partner established a business producing raw nutritional products. He said that they had incorporated permaculture principles into the structure of the business, telling me, “Sunflower is a permaculture business, but I don’t publicise it. It is a bit confusing to the public. We are registered as Sunflower Permaculture. We are working on a joint collaboration with a permaculture group in Ghana growing moringa”.

After leaving Pypsonderwater, Barnes had moved to a house in the forest near Knysna. Although he was not growing food himself (saying he didn't have the time, and that his garden in the forest was ravaged by wild pigs, porcupines and baboons) he still felt that he was “doing permaculture”. He was passionate about food that was well-made with wholesome ingredients, and tried to source as much food as possible locally, and buy organic products when they were available. He also cherished his relationships with his clients.
He elaborated,

> My operations here are based on the quality of relationships between people, me and my community. It started as a service to the community and the community service me from many different small gardens. It is about seasonally accepting what you receive and go with what you have got, support sustainable agriculture, organic and local products, like sustainably harvested honey. Local is important, even more than organic. You can ask your neighbour to improve their growing, and thereby improving the living environment through interaction with the community. You can improve the world through your immediate environment. Solutions lie in local economies, small economies and regional sustainability, to a lot of current global problems. Exchange with neighbours. Instead we pay R8 a litre for oil, oil-related packaging, and transporting fertilizer. If you bring things local, you can avoid that. Being seasonal means you receive fruits from the garden, and receive R10 for R10's worth of food. Social conscience is also important. It is harder to poison someone’s food supply. I buy from people I know with integrity, who provide the cleanest food they can. I sustain people and buy those products regardless of the price, supporting ethical farming practices. This is important in my life. It is a possible channel for global healing.

Although Barnes had left the project, he still felt that he was a part of the community. Many existing members visited him at his home, and he also visited the farm. He was still enthused about the operation and its members, and felt that his work was an extension of the vision created there. He said, “There is a very different community and spirit at Pypsonderwater in comparison to the land. It has a high energy, high

manifestation. The relationships are the thing there. It goes beyond the farm. I am still in the community, and others, and the people who went on PDCs there. A group of people with a common vision for a better world, how it can be ... It is about relationships as a group. The geographical location is Pypsonderwater but the heart is the KKSDP and the people involved. There are certain folk who really drive it. Without the community, it would just be the piece of land … I am like a beam or a satellite of the community."

The relationships grown at Pypsonderwater, and the practices engaged with there, did not end there. For example, three exited members and their partners had taken up residence in a small town in the Eastern Cape province. Some of them had been living there whilst involved with the project, while others arrived after leaving the project. The Cross's had bought in the area about the same time as the AZPI was instituted. Doug Cross showed me his garden, and explained the permaculture principles in action. I provide a brief account of Cross's explanation to demonstrate permaculture being put into practice in a different context than Pypsonderwater.

When the Cross's first arrived, they allowed the indigenous bush to recover, and the pioneer plants to grow instead of planting them. He said that the top of the slope was sea-facing and in a mist belt, allowing small-leafed plants like the *Rhus crenata* to harvest the dew with its many little leaves. He told me, "The more vegetation there is growing, the more dew harvesting there will be … The moisture seeps downhill, and runoffs with EM's [effective microorganisms] are going down the slope. This increases moisture to the garden … The succession snowballs as the ecology develops, it goes faster. The garden is easily overrun by other unwanted plants … This is all based on ecological concepts"

The Cross's had, since their occupation of the plot, put two acres under production, and had many different fruit-bearing trees, including mangoes, lemons, grapefruit, oranges and plums, two varieties of cherry guava and pecans, macadamias, Mexican apples, feijoas, grenadillas and grapes. Some of these grew between indigenous species that provided them with shelter from the sun. The garden began with a thick windbreak of mostly indigenous species which stood about 3-4m high. A range of herbaceous species growing at shoulder height - lavenders, rosemaries, lemon

verbenas and also *mpephus* and some other indigenous species inhabited a garden bed and another herb spiral [one of Mollison's inventions], and these were hard to distinguish from the wilder and self-propagated vegetation because of the density and abundance of plants growing on the lower, flatter slope of the property. Their greywater fed the bananas growing in a circle, where compostibles from kitchen were placed as well. They also used a pit latrine. He said, “People don’t realise this is a garden,” he told me, “I am a radical ecologist, and want to create a working ecosystem. It looks wild but it caters to our needs, versus growing things in straight rows”.

Nina Oakfield had bought land in the same area before becoming a member of the AZPI. She met her partner after being invited to a Rainbow Gathering by the Cross's at Khula Dhamma, an intentional community in the Eastern Cape. Her partner had worked at Mollison's farm in Tasmania, and had trained under well-known permaculture facilitators, Robyn Francis and Robina McCurdy (who was to establish SEED in Cape Town). They lived together at the Byrne Valley community in KZN for three years before moving to the village. When I met them, they were in the process of building their home themselves from reclaimed materials, and collecting trees to plant on their plot. Nina told me, “The general aim is to be self-sufficient. But it is a necessity to enjoy the beauty of each day. We are no longer dogmatic about it or have a fear of food shortages to dominate my life or drive me. I would rather be driven by celebration of how beautiful nature is and savour it, because it will change. And to provide for our needs and not compromise. Sometimes I feel I should be teaching to fund things faster. But it is not the answer, to compromise time and energy. I would rather consolidate energy here and allow the place to blossom and thrive - nature here is so vital. I want that to remain, I want to tread lightly. I want to share this place and make it sustainable. That’s why we don’t have loans. I make necklaces and weave with Cape Honeysuckle. The things I find I can do with the children, and it brings in some money. George is the main breadwinner. We have a craft and music group going. I would like to teach crafts, environmental education and permaculture, and combine it”.

Hutchings and his partner were brought there by their friendships with these ex-members of Pypsonderwater. He told me, “[It] is so embracing and amazing. We

had friends here - the Crosses and Nina, ex-members from Pypsonderwater who provided the door for introduction … The farmers' market has given us introductions to almost the entire community in a short space of time. We chose to live here because it is central to major centres like East London and Port Elizabeth. There are a lot of resources. I am fishing a lot to supplement my income. We seldom buy food. We get a lot from the garden".

Both Cross and Hutchings avoided using the term permaculture, but their lifestyles mirrored what was promulgated in permaculture thinking. Oakfield also felt less attached to the term, but continued to seek out harmonious, beneficial relationships with natural systems. It seemed to me that they both had reservations about fixed ideas of what constituted permaculture and for this reason shied away from labelling their activities as permaculture.

Stoller facilitated PDCs at other projects and institutions, such as SEED and at a project run by a former student in Spain. Together with Collier, she taught an urban-focused PDC in Cape Town. Collier consulted, and moved to a farm closer to Cape Town where he practised broad-scale agriculture based on permaculture. Both Petersen and Boom provided construction services for natural building projects. Howitzer also consulted on natural building, and at his suburban home he said he had a permaculture garden, solar geyser and recycled. He said, "We have a small sense of moving towards sustainability. Personal goals can be done in many ways."

Farrier, meanwhile, also got involved working at PES, and initiated a community garden in Cape Town. Davids worked on biodynamic farms and taught underprivileged youth about gardening. Smith's ex-wife went on to work at the African Centre for Biosafety. Another ex-member had a business producing organic body care products.

From the above accounts of how members felt that they benefited from their involvement with the permaculture project at Pypsonderwater farm, and the trajectories that the lives both members and ex-members took, a number of observations can be made. What emerges in terms of the benefits described is an appreciation for the relationships formed as well as a satisfaction with the process of

realising their ideals, such as living a more simple lifestyle and engaging with natural systems, or “nature”. Both of these aspects engendered a sense of personal growth for the participants. They also drew satisfaction from being able to create and contribute to the greater good in ways that they found meaningful – working in local ecologies through food production and land management strategies, and working with others with shared sense of value and common understandings facilitated by engagement with permaculture thinking and practice. These sorts of values included recognising the interconnectedness between themselves and natural ecosystems, which they were able to realise by putting permaculture theory into practice. In the process, they also derived benefits from learning from each other and the land. A number emphasised the importance of re-evaluating human's intrinsic worth, as well as that of the non-human, the relationships between people, as well as the relationships between people and nature. Many emphasised the value of producing and eating healthy food, and making this available to others. What seemed to emerge from this engagement with local ecosystems through considered design of households and food production systems was that as people interacted with the landscape and applied permaculture design theory and philosophy in their own lives, homes and relationships, they underwent personal and social transformation. It would seem then, that as people engaged with “nature”, they changed both the characteristics of the natural landscape, and were themselves transformed in the process.

The trajectories which their various life-paths took them on showed that even outside of the context of this project, many continued to work with permaculture ideas and to seek out the realisation of these ideals even when they did not use the term permaculture. Moreover, they maintained long-standing and new relationships that were developed through engagement with permaculture.

Neither the physical nor social systems developed during the AZPI's 15 year occupation of Pypsonderwater farm were entirely self-sufficient, nor immune from the dictates of the state and its bureaucratic demands. They were not cut off from the feelings or actions of their neighbours. However, they had achieved a degree of self-sufficiency to the extent that they could see to many of their basic needs without depending on external institutionalised supplies, through negotiations with neighbours, through interventions carried out on the landscape, subsidised by their economic

activities elsewhere and on the farm. In the process they were able to teach others knowledge to do the same, through courses on and off the farm, and through engagements with visitors and volunteers.

They had conducted their affairs in harmony with the country's environmental and agricultural legal requirements, and appeared to fulfil sound environmental practice in terms of both NEMA and the kinds of recommendations made by ecologists for the brittle Little Karoo environment. In fact, they had been able to engage with state and municipal officials and policies and find the flexibility with the policies to carve out an officially legitimate political space with in which to enact their vision of human-ecological harmony. In terms of Escobar and Tsing's recommendations to identify the different kinds of discourses around nature and ecology, it could be said that the kinds of ecological concepts drawn upon and their ecological aims – such as sustainability, diversity, conservation of natural resources and a recognition of the value of the "services" to humanity provided through ecological processes – are common to both permaculture theory and the ideas put forward in South African environmental and agricultural policy.

However, the "gaps", "frictions" or "tensions" between the discourses emerge when they become enacted. For the participants of the AZPI, their environmental management practices proved to be congruent with good practice and NEMA laws, and they believed that by offering opportunities for others to learn to do the same, they could contribute to change needed in terms of making human ecological interactions beneficial rather than destructive, and bring about concurrent social and economic change seen as a necessary alternative to profit-oriented industrial economies. In this sense they believed that what they were doing was necessary and of benefit to themselves, others and the planet. However, agricultural and municipal policy did not allow for their educational activities, rooted in the living models of sustainable practice through permaculture design. Indeed, their activities engendered social, legal and economic frictions for the group.

Moreover, there appeared to be a "gap" between the ideas of the members of the AZPI about good ecological practices which integrated agriculture (or agroecology) with ecological restoration (and thus conservation) *and* education: this range of

practices did not fit with state officials ideas of what constituted “agriculture” from the perspective of the Department of Agriculture, or what was best for “nature” from the perspective of the Department of Environmental Affairs. And yet, the AZPI members were able to negotiate these frictions, and find a space in the gaps between their visions of ecological best practice and those codified in law, through internal social processes, imperfect as they may have been, and engagement with the law and its bureaucracy. In that course, their own visions and internal processes were affected.

In establishing a legally sound educational institute for permaculture design in the form of living models of homesteads and land management strategies, this group of people generated a broad range of experience and knowledge that pertained to: locally-adapted environmental management practices appropriate to the fragile, damaged and brittle Little Karoo environment; practices that were in accordance with key environmental laws and policies; technical knowledge about self-reliant living in terms of energy, water, housing, food production, erosion control, water management and veld restoration; locally-adapted food production; accessing water in a water-stressed environmental and unpredictable climate; legal requirements for implementing permaculture design strategies and engaging state officials; and social organisation and self-organisation.

The kind of knowledge described above does little justice to the depth of understanding and complexity of practices which these individuals had developed and shared with others. These would be topics for documentation in their own right. The ways in which this group of people who formed the AZPI and created educational models for teaching permaculture design with an underlying aim of creating at minimum sustainable land use strategies provides a case study of what it means to “do permaculture” and one example of what is conceived of sustainable or ecologically-oriented practice. Described above are the ways in which permaculture design concepts have been used to inform household and food garden design, such as orientation of households to capture passive natural energy flows through the sectors concept; rationalisation of energy use though application of the zones concept and considered use of natural resources; the maximisation of use of natural resources through passive technologies such as swales and solar power; the rehabilitation of degraded land through earth works and the planting of integrated diverse and

productive food systems. In the process, individuals and their homes, their household production and consumption, appeared to become more closely interwoven with localised natural climatic and ecological processes, and the individuals more aware of their positioning in within them. What comes to the fore is a contemporary example of how a group of people have responded to the kinds of ecological and economic crises widely identified in academic and popular literature and media. The case study provides some insight into possibilities for ecologically responsive land management, social organisation, resource use and production for generating more balanced human-ecological relations than those implied by modern industrial economics. Moreover, it gives attention to the discourses employed which lie behind these kinds of strategies, and the kind of knowledge synthesised and shared amongst participants, and the ramifications their engagement in permaculture thinking for them on personal and professional levels. What also emerges are some of the challenges to one particular, but not unique, concept of what it means to live sustainably, or to "do permaculture". The challenges that emerged were partly structural, in terms of legal-political and economic limitations, and others – affected by those external challenges – appeared to be internal, generated by differences in opinions, personalities, approaches, or tensions around income generation, for example. Yet, after 15 years, "the hippies are still there", as one member put it.

According to ecologists consulted, it would probably take more than one generation to rehabilitate the severely degraded ecological systems of the Little Karoo. Participants in the AZPI, who displayed a long-term commitment both to the ideals of permaculture and the project itself, recognised that it could take generations to create or establish the human-ecological communities they envisioned, in terms of growing social relationships and growing some form of "climax" in the plant systems to support them. The processes, it would appear, may go hand in hand: establishing and regenerating ecological communities that include humans in their cycles appear to necessitate or generate changes in human communities, personal development and greater awareness around consumption, one's effect on others and the environment. It may be a mutually transformative process: overcoming human-ecological dualism, and creating more viable and integrated human-ecological relations through locally-appropriate land management strategies could lead to a revaluing of the worth of natural systems, and human relationships within and with that, through engagement

with those natural systems.

The kinds of anxieties that emerged which highlighted the dissonance between the permaculture and individual ideals and desires of participants in this project, and the institution of bureaucracies, financial demands and hierarchies led a number of participants to leave the project. Their reasoning had to do with the kinds of demands that were placed on them as the project's constitution and rules became institutionalised in ways that they did not expect, and which did not fit with their own concepts of freedom and self-determination. For a number of them, it also had to do with emergent hierarchies and forms of domination within the group, leading to a number of them feeling that they were not included in decision-making, or being pressured to leave the project because they were not seen as contributing sufficiently in either labour or with money.

The kinds of incongruencies between the ideals and the practices engaged with by this group - some a result of the legal, economic and political dynamics within which this project operated, and some a consequence of the ways in which permaculture theory was translated into rules and regulations to govern land and social relationships - emerged in the ways that participants in this project described their motivations for joining the project, and the ways in which they experienced their participation therein. I have mentioned another incongruity between the ideals of freedom and ecological salvation through integrating natural and human systems, and the implementation of those ideals and the practices in this project. It is an incongruity tied to the project's dependence on cash and labour to realise its aims, and to the ostensible desire amongst these practitioners - mostly middle-class "white" South Africans who saw permaculture as an alternative to the kinds of authoritarian apartheid system they grew out of - to generate social and ecological harmony, balance and abundance through a universalising ecological discourse that holds that social transformation can be brought about through the application of ecological design.

It was a dynamic and a disparity between the ideals and the practices engaged with by the group that emerged in the ways that participants described some of the challenges that they faced in trying to bring the ideals into being through the practice of permaculture, and which emerged in awkward silences and statements about the

position of the “coloured” farm workers in relation to the aims of the project, which themselves reflected an unease or sense of the unequal opportunities and privileges between the “white” and privileged people involved in the project and the labourers employed there.

The Paradox between Realising Western Ecotopian Ideals and the Realities of a Dependence on Cash and Labour in a Society Structured around Race and Class Inequality

The “coloured” farm workers’ positions in the social structure of this organisation as labourers was indicated in participants’ narratives about the kinds of challenges they faced on the farm. The labourers own narratives spoke of the differential kinds of opportunities afforded to them and to the members of the project. They also spoke of improved health and working conditions on the farm in comparison to what they experienced working on commercial fruit farms in the district, and a wider array of skills and tasks.

The labour featured in a story about one of the members exiting the project. Hutchings left after a dispute over his dog’s behaviour. The dog had bitten a labourer, and this was seen as unacceptable by the group. There were fears that further such incidents might occur again with labourers, children or visitors. The owner of the dog was given an ultimatum: the dog had to either go for training, or leave the farm. Following a vote amongst the group, the member was asked to leave when they were not prepared to send the dog for training. During an interview with Duncan, he asked me what I thought the most recurrent source of conflict was, and told me that it was issues around dogs.

When I asked about the development of the farm, its history and their reflections on their participation in the project, the paradox of employing disenfranchised “coloured” farm labourers in their efforts to be self-sufficient was not a theme that emerged significantly or overtly in members’ narratives. The dog’s biting the labourer and the resulting tensions in the group seemed to signify the labourers’ position in the initiative largely as outsiders, and different from those who lived on the farm and

participated in the project. That awareness of the difference between the farm labourers positioning as disenfranchised, “coloured” and landless people working in the aid of realising the goals and ideals of a mostly “white” and middle-class membership in this project was alluded to by Stoller, when she said she felt “the guys who work for us are experiencing something different and I hope they enjoy our relationship. But they have said that”. The members’ recognition of some sort of responsibility towards the labourers was also indicated in their paying above minimum wages (initially, until the minimum wage changed) for shorter working days, the supplementation of the labourers income with produce from the gardens, material assistance with their own gardens and in emergencies. A recognition of the labourers’ own positioning as landless tenants on other farms was implied in a statement about a future wish to buy the neighbours’ land where the labourers could build their own houses.

My conversations with the farm labourers indicated a shared interest in food gardening - all three had gardens at home. Cilliers reported having learnt more about organic gardening, something he said he grew up with. He said, “Organic growing is healthier for people and animals. I have a garden at home, and I grew up with it. It was always organic. I know better now how to lay out gardens. I use mulch, and worms. I don’t have cow manure now, but sometimes I use sheep manure”. The labourers reflected on the difference between working on the commercial fruit farms and in this permaculture project. Work on the commercial farms included irrigation, harvesting and pruning of fruit trees, packing fruit crates for distribution to the market. I was told, “They do things differently here, every day. There are on the farms it is the same year in and out, and you get so used to it … In permaculture, you grow vegetables, and live in a greener environment. You don’t see the rubbish and pollution of the earth. Where I live, there is a lot of rubbish, it just gets buried in the garden. It is a problem. People talk about global warming, so rubbish can also cause problems. It can be important for people off the farm, food is expensive. [This is] a healthier environment to work in because they don’t use poisons here”. September told me, “In those times I was working with a fork lift, driving trucks, and after pruning, thinning and fruit picking, the same rhythm every year. Here it is farm work - digging trenches, working on the buildings, making bricks, fixing roads, doing the basics. The work is very different … There is always s food all year round, while on the farms where

there is fruit only in the summer. On the farms you plant trees only one spade deep, here the holes are much bigger, with soil so the roots can penetrate the ground. It seems the trees grow faster here, and they don't use poisons here like on the farms". Cilliers said, "It is a very different kind of work from the fruit farms, there's not much fruit here. The farmers spray a lot of poisons, you are sick a lot - chests, easily get colds. It is a more healthy environment to work in here … It is a much better working here. On the fruit farms we worked 6-6, here it is seven hours a day, and I can still do my garden at home after work. People here are helpful and friendly, they teach us a lot, explain how things should be done".

The way that the farm labourers describe the differences between their work on commercial farms and at this project indicated that their work at Pypsonderwater was more varied, and provided a healthier working environment which they valued. The labourers reported especially learning about building. Yet their comments indicated that the work - like digging holes and swales - was not forgiving. September said that it was hard on his back, because he did a lot of bending. Their statements moreover indicated the very differences between their home environments and that which they experienced at Pypsonderwater. Cilliers' observation that there was more rubbish where he lived as a tenant on a commercial farm than in his working environment pointed to these differences.

A conversation with September brought into clear relief these differences in opportunity and material wealth between what the labourers experienced at home, and what they found at Pypsonderwater. I had asked him whether he felt he could do the things at home that he learnt on the farm. He said,

> I could do these things off the farm. Sustainable agriculture like this is important. It can help with the future. There is less expenditure … I get quite a lot of food from the farm, it helps a bit at home. My wife is unemployed and I have one child at school. Food and petrol prices keep going up, and life gets more expensive. I enjoy the building work, I just want to get the plastering right. I learn different things from different people, each person does things differently. I learn like that too. I want to build, to make bricks and look for something in town. Mudbricks are cheaper - just red earth, clay and sand, it is

> much cheaper. But to buy cement and river gravel, it is more expensive to make concrete bricks. The municipality is supposed to build houses but they make many promises. I have applied for RDP housing, and am on a list but I haven't gotten a number yet.

He then explained to me that it was hard for farm workers to get houses because the people who needed houses were from farms, informal settlements and those who lived in shacks at their parents' homes in town. The council that decided who got houses, he said, was mostly made up of people from town so it was hard to get a place if you lived on a farm. He explained further that it was challenging to live in the town houses which tended to be very small and lacked privacy. Moreover there were unexpected bills that one didn't have to pay on the farm where they could fetch water, or make a fire outside to relax. On the farms, tenants only had to pay for electricity, although it was double the town prices.

September's desire for his own house and his inference that it was preferable to live on a farm than in town houses provided by the municipality - only a vague possibility - reflected the farm labourers positions as landless tenants, their own desires for homes of their own in a situation where there was little surety that that would transpire. While the techniques and approaches they learnt at Pypsonderwater seemed to be plausible and acceptable to them it wasn't within the farm labourers' reach to really engage with them fully because they lacked the space, land and means to develop their own homesteads.

Although the members appeared to consider the unequal social and economic positioning between themselves and the labourers they hired, the project still operated in such a way as to depend on that wage labour. The group set out officially to overcome the dimensions of both apartheid and industrial society they felt were destructive or counter-intuitive, and as revealed in their engagements with government officials, to develop models to create an alternative to industrial capitalism, and which could aid in the relief of rural poverty. The project's social organisation and the values, ideologies and assumptions were based largely on their own middle-class values informed in part by Western philosophies rooted in ecological sciences and counter-cultural ideals that included an element of

romanticism about non-Western cultural ideals. In the context of South African history, their capacity to enact their ideas of achieving freedom and creating a better, more socially and ecologically just world less tied to the value of money than humanity - their educational backgrounds, travels, and accumulation of money to buy land, albeit collectively - was not something available to the rural poor, like the farm labourers that helped to develop the project. To a large extent, these were opportunities available only to people like themselves who had the means to explore and experiment with these kinds of practices they saw as necessary to bring about global social and ecological transformation. In South Africa, where "white" people have long been at the receiving end of policies aimed at benefiting people classified as such, and doing so by exploiting people classified as "black" or "coloured", the social structure has not changed much. It remains a highly economically stratified society, with the stratifications still correlating with apartheid race categories. As a consequence, the kinds of activities that this group engaged in - buying land, building homes, developing infrastructure and offering courses where others could learn about these practices - were not the kinds of things that the "coloured" labourers could participate in. As indicated in the labourers' narratives, these basic needs which the members of the project pursued were things that the farm works themselves lacked, desired and seemed unable to access at the time of writing. Their participation in the realisation of the group's utopian ideal was limited to their labour exchanged, through which they gained knowledge about permaculture and access to some food and resources, but their ability to fully participate in that utopia was limited by their economic position.

In this respect, the project could be seen to have been reproducing spaces that were only accessible to people who had the means to participate in their project, either as volunteers, course participants or members to build their own houses - and of course, who shared the ideals and ideas that the project communicated with the public. Given permaculture's proximity to the counter-cultural movements of the 1960s, as well as Western scientific philosophies and ideas found in ecological theory, these ideals could be taken as representing largely western concerns. In South Africa - as the constitution of this group indicated - these concerns were taken up amongst a predominantly "white" constituency in permaculture circles. As such, this project became accessible and of interest mainly to other "white" middle-class people who

shared the same general values as did this group. Some members tried to make this access more available to people who could not afford the courses by offering free training here, and accommodating volunteers. However, the majority of visitors and participants in the courses here, and members, would be classified as “white”.

Most members remained seemingly silent about that particular contradiction wherein they were pursuing their own ideas of how to attain freedom and harmony that were in part drawn from a Western notion of resistance to the constraints of industrial society and the values associated with the idea that social transformation should begin with the individual application of ecological design and also made possible by their own social trajectories, their positions of privilege as “white” South Africans following decades - nay, centuries - of laws and institutions geared to favour “white” people in South Africa - primarily in the form of industrial capitalism - and their employment of “coloured” people who had a very different life situation, and who had been dispossessed by that same history.

This chapter has described the contradictions and paradoxes that emerged between the ideals and ideology of permaculture practice - self-sufficiency, auto-regulation, decentralisation, its ethics of earth care, people care and surplus share, and the desire to create an alternative to capitalist systems of exchange and the exploitation of people and the earth, employed by the group - and the ways in which these ideals and visions were realised in practice. In their engagement with the law, and their attempts to realise the project’s goals through infrastructure development and land management, it appeared that in practice their operations began to resemble more closely the hierarchical system of governance and the social history that the project grew out of and was trying to create an alternative to. It was effectively shaped by the legal dictates of the state, and through the project’s dependence on capitalist and historically-produced relations of production. It reproduced within itself elements of the capitalist economy and legal system. Through the employment of a universalising discourse of discourse of ecological utopianism rooted in Western counter-cultural ideals, this group was seeded at a moment of political transition from a “white” nationalist, racist state to a liberated democratic government. At this point of historical transition and hopefulness, they hoped to create an alternative to that authoritarian regime by embracing non-racial universal ideals to bring about social

and ecological change. However, in this case, the enactment and assumptions that permaculture is based on - that land management through ecological design will lead to social transformation - was available only to those who had such access: the social reproduction of permaculture in this context was not accessible in reality to the labourers paid to work there. It was accessible to the mostly middle-class and mostly "white" constituency who participated in it as members, volunteers and researchers like me. It was not intentionally designed that way, and was not restrictive in terms of race as such - but it was restrictive in terms of class, and attractive in terms of a Western cultural and philosophical heritage - "white" cultural concerns, in terms of the thinking promoted in whiteness studies. Hughes' (2010) dissects and describes "white" Zimbabweans notions of nature conservation, right agricultural practice and love of the landscape as an obsession that became a cataract and an inability or unwillingness to see the lives and roles of "black" people in those landscapes and livelihoods. One could argue that amongst these "white" South Africans the ideological drive to realise self-sufficiency through the implementation of agro-ecological "systems" designed around ecological principles, the necessity of accessing and co-managing natural resources to realise those goals (although they were framed as resistance to exploitation), and the pressures to conform to national and local statutes and laws, occluded and diminished the continued salience of race and its attachment to class, and existing race relations that characterise South African society, to the people involved in the project.

Permaculture in this case could be seen as a perpetuation of "whiteness" and "white" people's cultural interests and inclinations, which reproduced historical and colonial relations of production and society, while at the same time developing ecological knowledge and practices. However, these inconsistencies in access and opportunity would need to be overcome to realise the universal social-ecological utopia imagined in permaculture theory. This, it would appear, could only be possible with universal access to the kinds of opportunities afforded to this group - in particular, access to land and the means to develop it.

The way in which the company was structured, its need to manage natural resources, is positioning in South Africa's legal, economic and historical context, its development being reliant on remittances and the hiring of labour, emerged in the

narratives of those involved in the project, and the silences in their narratives. Some of the incongruencies emerged between the ideals of the group of mostly "white" South Africans at the moment of transition to democracy through the vehicle of permaculture and its enactment in a marginal rural landscape indicated in the previous chapter.

The adoption of the Section 21 company legal framework, the need to co-operate to access and manage natural and collective resources, the dependence on labour and monetary contributions, and the adoption of various rules and regulations governing social relations and land use, as I have indicated, set up a fundamental contradiction between the project's permaculture ideals and philosophy of ecological communitarianism and its actual practice.

The frictions that emerged between the ideals and goals envisioned through permaculture philosophy that appeared to appeal to a mainly middle-class "white" counter-cultural consciousness and the way it was practised in this group suggests a few additional paradoxes and issues. What has been described was an enactment of a notion of freedom and harmony through the implementation of an ideology and particular technologies, that was yet reliant on cash and labour. As such, the project was set up in a way that precluded greater self-sufficiency and a dependence on the the capitalist economy. In practice, it appeared to recreate a social order that it claimed to be transforming. In its establishment, the project and its members did not seem to consider its wider structural context that precluded people like the "coloured" labourers engaged in through a system of wage labour. In the realisation of their own goals, ideals of human-ecological salvation through communion with nature, the group seemed to be reproducing the kinds of racialised spaces and dynamics that they hoped to be addressing through the application of permaculture discourse. Put bluntly, they were reproducing spaces that generally foregrounded their own cultural and ideological concerns that could only be realised by those who had the means to buy into their organisation and realise their personal and permaculture ideals of being able to build their own houses, grow their own food and integrate with nature. For the "coloured" labourers on the farm, their access to this space was determined by their position as labourers recompensed at minimum wages although they reported improved working conditions, such as greatly reduced exposure to poisons and

pollution, enskilment, the receipt of material subsidies in the form of food and some resources for developing their own gardens, they still engaged in often very intensive labour and remained effectively as impoverished tenants on the land of other "white" landowners. The same kind of pursuit of self-realisation, of secure tenure, of desires for having their own homes, space and opportunities to pursue their own ideas of freedom were not available to them as farm labourers.

What appears in this case is a reinscription of "whiteness" - white people in South Africa pursuing their own ideals and ideas generated from within a Western cultural frame in a way that excluded people historically denied access to "white" spaces of privilege. The denial does not occur in theory - in this case a theory that universalises social transformation as achieved through through individually-driven integration of human and natural systems that claims to create an alternative to inequality but does not look at the actual structure of inequality, nor the salience of race in that. The theory seems to presuppose a certain privilege - a degree of land tenure and economic or material means - that global capitalism and colonialism have historically stripped from indigenous people by people of European descent.

Permaculture's universalisation of ideals and its naivete or ignorance of deep-rooted social and economic patterns and process seems to allow a certain blindness to its own practices that reinscribed in this case racialised spaces of inequality where - in South Africa in particular - "white" people's cultural ideals, even when understood as constituting an alternative moral response to the injustices associated with Western-oriented neoliberal economics, that claim to espouse justice and good ethical conduct serve to reproduces historical race relations and spaces of "whiteness".

These issues introduce some fundamental dissonances between the pursuit of freedom and autonomy sought by individuals in this group and the vehicle they chose for that realisation: a permaculture ecological philosophy based on notions of communitarianism and ethical human and ecological relations. In the pursuit of freedom, unity and integration with nature and harmony with people, what emerged were strictures and structures necessitated by the political and economic context that provided some limitations to the visions of freedom the group and individuals held. Self-imposed regulations and monetary contributions, internal power dynamics, and

the need to co-operate and co-manage natural resources to bring their vision of self-reliance into being, cash generation for the material goods required to farm, build houses and pay contributions became inevitable, and external labour was needed to develop. These dynamics placed additional limitations on the realisation of self-sufficiency, in part a result of the seemingly inescapable enmeshment with the monetised economy, and a voluntary imposition of cash contributions. The dependence on external labour tied the group tighter into the cash economy, thereby raising additional impediments to the realisation of self-reliance and particular notions of freedom. Importantly, these dynamics also drew the group into participating in an exploitative capitalist economy that itself was recognised as an impediment to freedom. That, in combination with South Africa's historical and colonial legacy that privileged these mostly white practitioners seemed to carve out a space for "whiteness" and the foregrounding of "white" people's needs and power.

These data raise questions about environmentalist pursuit borne of a Western cultural framework and ideology - both that of ecology and the counter-cultural back-to-the-land movement permaculture is associated with - and the pursuit of ideals of freedom and social-ecological integration and transformation beginning with the individual in a world and in a country indelibly shaped by colonial and contemporary neoliberal economic relations of production that have historically privileged people of European descent and pale complexions.

Permaculture theory would suggest that a design and the form in which a site is developed should be locally appropriate, both in terms of ecology and the needs of the people developing a site. As such, no one site would look the same, nor take the same form. In this sense, the AZPI of Pypsonderwater farm in South Africa, and its collective of participants, is unique. My experiences learning about permaculture in various contexts described so far in this thesis – at Pypsonderwater, at PES's sub-economic location in Mitchell's Plain, at an educational ecovillage in Portugal, at festivals, organising events, interviewing "permies", visiting projects around Cape Town and South Africa '- showed me that this was just one of many manifestations of permaculture in practice, of attempts to realise a world that puts people and environments that we share with other living creatures before profits rather than the other way around, and to ameliorate the kind of social and ecological damage brought

about by contemporary economic practices such as intensive commercial agriculture and ecologically insensitive development, for example. The activities and stories, the motivations and intentions of many of the people interviewed reflected, with different emphases, a common language and a duplication of concepts, ideas and practices in a range of locations – a fractal of compost toilets, pit beds, worm bins, swales, food gardens, rain tanks, education, natural building and simple living.

The work and activities of the people who did or who had engaged with permaculture practice and ideas was not limited to the spaces or occasions labelled "permaculture". They were involved in a range of other pursuits which they found were influenced by their experiences with permaculture. New global and local communities of practice and knowledge sharing appear to be emerging, not isolating themselves or cutting themselves off, but taking on the challenges of policy, engaging across social, economic and geographical boundaries with a shared desire to care for the earth and each other, and seem to be transformed in the process of engaging with and creating new ecological relationships.

At the same time, the practices described above raise questions about permaculture practice and environmental universalisms employed in environmental movements, and the ways that these are constituted by and intersect with particular historical, economic, political and ecological contexts they are borne of and function within. Permaculture theory and practices appear to offer a range of avenues for bringing about sustainability and social-ecological integration and harmony, but at the same time obscure actual relations of social reproduction. And it is in these gaps between ideals and realities that there appear to lie significant points for the anthropological consideration of contemporary global environmental movements.

Chapter 9: Conclusion

The topic of investigation in this thesis is how permaculture constitutes a global social movement organised around a concept of social-ecological integration that finds its expression in post-apartheid South Africa. A range of sources have been examined to undertake this investigation: the literature surrounding permaculture and the theories that inform it, as well as real life examples explored through ethnographic methods applied at two locations in South Africa where permaculture was practised. These findings have been contextualised in terms of the consolidated permaculture literature and theory, as well as the political, economic, ecological and historical context of South Africa which permaculture in this country has emerged alongside other ecological social movements with a global relevance.

Anthropology has a long-standing interest in documenting cultural forms, human-ecological relationships and how culture is shaped by environment and vice-versa. Anthropology and ecology have a close relationship, both in their genesis alongside colonialism and in shared models for understanding cultural and ecological dynamics. Traditionally, anthropology has been reserved for the study of culture, and its theories and accounts of culture have tended to be dominated by functionalist and bounded notions of culture.

Environmental anthropology takes concern around the environment - environmentalism as a cultural perspective - as a central point of departure. This area of interest - how people organise around a concern for the environment and create meaning and act upon their environmental notions - is analysed by anthropologists in terms of the biological, historical and environmental intersections which produce them. None are considered mutually exclusive, but are instead thought of as overlapping, and sharing common features as well as differences. In recognition of the patterns of socially and ecologically destructive consequences of resource exploitation associated with capitalism and its history in colonialism, a number of anthropologists (and others) encourage the exploration of alternative ways of relating to the environment, and models for human-ecological relationships that overcome both the

conceptual dualisms that place nature at the service of culture in Western philosophy and capitalist economic systems. The historical constitution of different forms of environmentalism, the meanings and actions that people develop around the notion of environment - both as social movements and when expressed as a care for the environment - the stories people tell each other, the dissonances - gaps or frictions - between and within these stories - and the context within which they do this are all of anthropological interest. Anthropologists of environmentalisms take an interest in the discourses, knowledges and practices, global and local social, political and economic processes that influences these, and the identification of useful environmental practices.

What appears to be missing, however, in much of the environmental anthropology and social movements literature which has a largely northern-bias, is a consideration of race[59]. Insights from whiteness studies introduce questions for environmental anthropology and environmentalist movements around environmentalism as a cultural perspective particularly when it is of Eurocentric origin and developed amongst one predominant race group or another. Of particular interest in this literature is not just any race, but perspectives that emerge from people with very pale skins, who would in South Africa under apartheid and currently, be categorised as "white". The literature asks, under such circumstances, in what ways the points of view of the pale skins might be privileged, how they might present "white" cultural values as supreme, and in what ways the points of view and experiences of people not categorised as "white" might be occluded in discourse or narrative and to what effect.

South African environmentalism, though poorly understood, has been widely associated with the state, and understood as privileging "white" people's environmentalist mores, in particular, biodiversity conservation. Its less obvious permutations have often gone unrecognised - in particular, those expressions of environmental concerns that were not always framed as such: for example, apartheid policies that governed land management and people, and the forms of resistance to those policies and practices which emanated from people indigenous to Africa. To some extent, the cleaving of South African society through legislation and policies

[59] With the significant exception of Moore et al's (2003) exposition on Race, Nature and the Politics of Difference.

around racialised access to land, resources and opportunities found itself reflected in the forms of environmentalism that have surfaced post-apartheid. They tend to be represented by the kinds of environmental issues facing the largely poor "black" majority - the kinds of issues associated with long-term historical inequalities - and the environmental concerns like biodiversity conservation dear to the state and largely "white" and middle-class interest groups. It is in this context that new forms of environmentalism have emerged in South Africa. Increasingly, it has been shown, South African environmental movements are tackling issues relevant to the broader populace than the traditional nature conservation orientation of South African environmentalism: issues associated with inequality and unequal exposure to environmental health risks - especially associated with race have come to the fore. Two such examples discussed were the Environmental Justice Movement and the Solidarity Economy. Recognising that exploitative relations of production under profit-oriented and neoliberal economies generate both ecological and social suffering, these movements call for a redressing of inequality, a more balanced distribution of economic opportunity and healthy living environments. Less oriented towards traditional "green" concerns, they foreground access to basic services like sanitation and clean water, and exposure to industrial pollution, for example. It is within this broadly sketched political, economic, social and ecological context that permaculture practice and its dissemination in South Africa has developed.

Permaculture is presented as a set of approaches or methods for the design of human settlements and production aimed at reducing resource consumption by responding to local ecological conditions. The theory draws largely on the kinds of ecological concepts and ideas discussed in the first chapter. These ecological concepts are extrapolated into a set of guiding principles and ethics which also draw upon notions of traditional ecological wisdom. The permaculture discourse presents care for the earth as a global universal that supersedes politics, economics and culture, and is to provide the basis for the creation of a global consciousness, culture and society to replace global capitalism and militarised control which currently characterises global socio-economics and politics and is understood to result in environmental degradation.

Permaculture doctrine promises a certain salvation from a world that seems increasingly complicated by global processes and ecological change linked to long-term historical dynamics associated with colonialism, industrialisation and contemporary neoliberal trade that shapes national and economic and environmental policies. It provides the individual with a sense of empowerment and inner transformation that allows them to feel connected to and a part of life processes. Founded upon a set of ethical codes and principles and from notions of traditional and ecological arguments for environmental stewardship into the realm of moral injuncture, faith in processes and powers not fully comprehensible through human understanding and a path to universal balance and harmony. The individual and the communities of permaculture practices, it is assumed, will effect the changes needed in political and economic spheres too.

To this extent, the way the permaculture was conceptualised as both ethical and practical, and the way in which it was received by the PDC participants, and the spiritual and personal satisfaction that interviewees derived from their engagement with the ideas, practices and social networks, gives this social web of practitioners and the discourse and dynamics through which it has diffused globally a quasi-religious character.

Permaculture's entry into South Africa in the early 1990s coincided with the dissolution of apartheid, which had - building on colonial policies and practices - defined the country's society by racial categorisation that engineered radical inequalities between those categorised as "white" and "black", "coloured", and "Indian". Permaculture's anti-authoritarian counter-cultural ideology and more pragmatic approaches to food production appealed then to a largely youthful and "white" middle-class constituency who sought alternatives to the racist authoritarian regime they grew up under, and fit comfortably with a non-racial or colour-blind philosophy of rainbowism that was embraced by the state and the society at that time. Permaculture spread through various channels - particularly PDCs, its practice at emerging new ecovillages and through schools environmental programmes, as well as a range of informal and loosely organised gatherings - since the 1990s and 2000s. At the time of writing, the movement had arguably moved beyond its traditional "white" constituency to become more racially and economically representative, although these

race and class schisms which continue to characterise South African society to present were equally remarkable in the permaculture movement.

In chime with the founding precepts and proposals put forward by Mollison and Holmgren, amongst my informants, permaculture provided an alternative to the social and ecological impacts of industrial economies, and a means to access food grown without chemicals and live and reproduce in such a way as to not be harmful to the earth or people. Permaculture emerged in the interviews as a useful systems-based tool for maximising energy efficiency in various contexts but primarily for application in food production and settlement design by inserting "systems" into existing ecological processes.

For many of the interviewees, engaging with permaculture practices and the social networks that developed around them, it was not only a tool to create an alternative to destructive economic and political systems, but also a conduit for self-realisation and empowerment, a sense of community, contact and communion with natural processes and, for many, expanded access to organically-produced fresh foods and the health benefits they derived from those practices.

Situated within the broader, looser network of the global and South African permaculture movement was the group of mostly "white" South Africans who had put into practice the permaculture ideals at a communally-owned farm located on damaged and marginal land in harsh semi-desert conditions. I tried to understand and communicate the various mechanisms and methods this group engaged with in interpreting the permaculture ideas they were attracted to, and what sorts of forms these practices took in reality. These practices included the building and equipping of houses in an ostensibly ecologically-oriented or sustainable manner, broadscale earth works for water capture and erosion control, small-scale water catchment and food production through ecologically-oriented gardening.

What I discovered in this specific case study of permaculture practitioners was that, in line with much of the permaculture doctrine, was that the participants were motivated to develop their permaculture project by a desire to be free of strictures they associated with industrial capitalist society, and to realise their ideals of communal

living, communion and integration with nature and to be self-sufficient - and to a large extent, create an alternative way of living to those aspects of industrial capitalist society they perceived in South Africa as problematic for those involved.

In the process of trying to realise social-ecological integration and sustainable living through the application of permaculture philosophy and theory, the group adopted a legal structure and instituted social and resource management systems that included a system of bureaucratic administration, cash and labour contributions. The group also had to adapt and shape their vision and practices to fit with South African municipal and environmental laws. The group's interpretation and application of permaculture philosophy and practice into a range of regulations over social relations, infrastructure development and resource management introduced a dimensions of centralisation, regulation and hierarchy into the project's efforts that presented a paradox for the group's desire to realise their personal ideals of freedom and permaculture's aims of decentralisation and self-determination. It would appear that freedom is itself paradoxical, requiring some form of self-regulation and discipline.

Another significant contradiction emerged in the execution and interpretation of permaculture discourse in this particular case. This entailed this group of predominantly middle-class "white" South Africans largely benefited by their historical positioning in relation to colonialism and apartheid, employing "coloured" labourers to support the development of their permaculture project that was aimed at subverting capitalist relations of economic production, bring about systems for self-sufficiency that were ecologically cognisant and benign, if not mutually-beneficial, and in that process attain freedom from "the system".

The contradiction lies in the unintended reproduction of colonial labour relationships that correspond with race, and the project's engagement with the wage labour system of monetary exchange and dependence. This contradiction was deepened by the fact that while trying to pursue their own goals of freedom through self-realisation and ecological design, the people employed to help realise their goals were, as a result of their own historical positioning, unable to pursue the same kinds of activities like building their own homes, for example, or investing in infrastructure for self-sufficient and sustainable living.

Given the roots of permaculture discourse in white Australian Western ecological science and counter-cultural movements, and its adoption by this group of mostly middle-class "white" people seeking ecological alternatives, and the inaccessibility of such modelled practices to the "coloured" people employed in the project, the group's historical positioning as "whites" long-privileged by processes of colonialism and apartheid, and the adoption of largely Western perspectives on environmental thinking, their practice might be considered the re-inscription and reinforcement of "whiteness" through this environmentalist pursuit in the South African context.

As such, this specific case of permaculture as a form of environmentalism might be reflective of South African environmentalism more broadly, wherein the diverging interests between those of "black" and "white" environmentalists surface between the issues foregrounded by, say, "brown" or "green" environmentalist pursuits. Yet the broader movement that this case is a part of suggests a potential relevance for permaculture, given its shared concern with other South African environmentalist movements that foreground food security, alternatives to capitalist economics and the interest in meeting basic needs such as water supply, sanitation and housing.

Based on this limited account of permaculture practice rooted in two sites in South Africa, it would appear that permaculture does constitute one dimension of South Africa's environmentalist movement, and might fit in with the vision of a solidarity economy and some of the priorities of the Environmental Justice Movement. It is largely defined by its philosophy and practices, though is confined in many ways to its own label and ideological stance. While it started out as a mostly middle-class concern amongst people categorised as "white", interest among different social groups was taking hold during the period in which this research took place. Permaculture in South Africa appeared to represent a bridge between needs-based and conservation-oriented environmentalist concerns, as well as between class and race groups. The movement was largely not very organised as a whole, its momentum and growth achieved primarily through the work of organisations that promoted permaculture, and between networks of individuals that practised it. There was no co-ordinated effort from the movement as a whole, and as a result, to join forces with other expressions of environmentalism that had shared aims to created alternatives to

the social and environmental exploitation and disconnection necessitated by contemporary neoliberal oriented economic policies that govern environmental management practice in conservation, infrastructure and industrial development in South Africa. The permaculture movement in South Africa shows a propensity for being able to productively link with other social movements here, although it also brings to the fore some of the challenges and opportunities for generating a sustainable culture and challenging the global status quo.

What emerged from this research, however, was the formation of relationships and sense of community around the notion of social-ecological integration, and the creation of new understandings and knowledge about local environments and their management in range of different contexts as observed in the Western Cape province, but evident also across the globe. Practitioners were generating and contributing to a body of social-ecological knowledge, both in terms of environmental management practices and social arrangements to bring about the ideals set forth in permaculture discourse. These ideas, discourses, and knowledge-practices valued and drew on established bodies of knowledge, both "scientific" and "traditional", not confined to what was derived from "third world" or southern contexts, but from the north as well. Permaculture seems to represent one amongst an array of ecological perspectives and social movements that performed a global ecological politics of practice. Perhaps alone, permaculture as explored in the South African context may not seem too significant in a world of more than seven billion people. But, understood as one of many such movements, with a global following, the potential for collective transformation of politics, practices and environments seems to become more meaningful in anthropology's humanistic pursuit and desire to overcome the effects of dualistic thinking that sets culture above nature.

This particular case study highlights some dimensions of environmental practice in the context of permaculture that appear to perpetuate race-defined environmentalism in South Africa. This was not the intention of the group, but by virtue of their historical privilege and adoption of largely Western philosophies and theories to inform their environmentalist pursuits in a way that was not fully accessible to the majority disenfranchised by that same history. The economic opportunities, access to land and marginalised social positioning of the project under scrutiny's labourers

precluded them from participating fully in the model permaculture vision enacted by the group, and instead these labourers worked in a wage labour system to realise the ideals of the "white" majority of members of the project.

What also emerges in this case study is that the form of this group's internal management structures began to resemble more closely the systems of laws and regulations that they, and the permaculture doctrine, claimed the practice would create an alternative to. On the one hand this demonstrated the project's activities to be environmentally congruent with the South African state's environmental policies and approaches, while on the other, the inescapability of both the legal and economic context the project operated within.

Effectively, what the case demonstrates is that while inequality and lack of secure tenure remain a feature of South African - and global - society, any kind of universal environmental utopia is precluded. For a broad-based environmentalist movement to take hold - and for movements like permaculture to have significance any distance beyond its predominantly "white" participant base - these kinds of issues that include attention to "white" privileged assumptions and the foregrounding of "white'" values, need to be included and addressed. Yet, at the same time, recognising its relevance to that particular social category, might not mean that it is altogether irrelevant when it is understood that middle-class people are the ones who most need to change their consumption behaviours and rethink their own relationships with the planet (Guha 2000).

So, on the one hand, permaculture provided a channel for people interviewed and engaged with to generate a sense of community around a notion of human-ecological integration, and at the same time a sense of connection with natural processes. It may well be that the kinds of knowledge and practices generated and shared amongst the spectrum of permaculture practitioners interviewed my have some practical value in terms of generating knowledge about sustainable, low-impact living. On the other hand, the actual potential for realising self-sufficiency through permaculture practice evidenced in the particular case study appears scant, reliant as the group was on remittances and affected as the participants were by the inability to generate an income from their rural location. In the case study presented, although the participants

sought to create an alternative to the historical status quo of the capitalist political and economic system, to some extent they appeared to reproduce it. Although permaculture discourse calls for the creation of a new system to replace the old, it appears in this case study to be reproducing those aspects of the system most shunned, and in the context of South Africa, historical relations of power and economics.

Permaculture in South Africa appears to be one of an array of avenues for seeking out ecological sustainability and overcoming the decried separation of people from their natural environments. On its own, while it is global in its reach, it does not appear to be a significant mass movement likely to bring about global social and ecological transformation. When viewed as one amongst many such movements, with overlapping interests and aims, it seems more significant as one amongst the movement of ecological movements occurring globally. What the case study seems to foreground is close consideration of permaculture and any sorts of environmentalist pursuits not just of the discourse and practices that are perceived as socially and ecologically beneficial, but also the particular kinds of social reproduction they imply, and their nexus with broader political and economic contexts - both retrospectively and prospectively.

This research has introduced a heretofore unexplored topic in South African environmentalism: the permaculture movement. It has contributed not only to an understanding of issues in South African environmentalism and social movements, but also to South African environmental anthropology which, like environmental history, is yet a small field. The gaps identified in the permaculture discourse - in particular, its ignorance of race and class as fundamental social determinants, especially in South Africa, emerge as gaps in the body of environmental anthropology theory and social movements. The research introduces a focus on whiteness and privilege rather than a more traditional focus on blackness and oppression. But it also raises questions for whiteness studies - questions that cannot be answered here, such as what happens when a cultural perspective that is ostensibly “western” or displaying “white” cultural values in relation to environmental care and usurping global capitalism, is taken up amongst people who wouldn’t fit the “white” category.

It also returns to questions developed almost a century ago in anthropology about the validity of a perspective that takes as foundational to cultural perspective the social category of race. On the one hand, this is an essentialising perspective that reduces all issues including environmentalism to race. In that process, other important dynamics - like class - might be downplayed. It can essentialise environmental discourses and provide an over-deterministic interpretation of history and society that precludes the role of individual agency. These are issues that have been discussed in anthropology at length, and have been probed and questioned in theories that challenge the notion of culture as tied to race, and the idea that certain environmental perspectives are tied to static social categories rather than long-term social relationships such as Agarwal (2005) indicates. This kind of thinking introduces into environmental anthropology and environmentalism a vital analysis of environmental perspectives not so much as universal truths but socially constructed and moulded of particular socio-historical circumstances. That is not a new perspective in environmental anthropology, but a particularly raced analysis is. It also goes against the grain of all anthropological theory that rejects essentialising discourses that reinforce structural determinism and devalue the role of human agency.

Further research might call for a deeper understanding of movements like permaculture as it is practised under different circumstances, and its connection with other environmentalist impulses. Actual ecological impacts of permaculture practice in terms of land use and ecological stewardship may also be useful. The weakness of the detailed case study that does not provide much perspective on the broad and global environmental practices associated with permaculture also suggests further fruitful avenues for research, including some perspective on the interactions between various environmental movements like permaculture, and how they constitute a loose form of global environmentalism.

Given anthropology's propensity for understanding complexity, and its somewhat narrow perspective on cultural expressions, it would seem that together with other approaches - both academic and those which emerge from environmental movements - environmental discourses and movements like permaculture, and their features and characteristics which might be considered ecologically sustainable, could better identified and understood through this broad lens.

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