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Permaculture: A Vision and Strategy for Sustainable Development? A Malawian Case Study.

A thesis presented in partial fulfillment of the requirements for
the degree of Master of Philosophy in Development Studies at
Massey University, Palmerston North, New Zealand.

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2012

Abstract

This thesis is a study of perceptions of sustainable development and whether permaculture contributes to sustainable development in Malawi. Underpinning this thesis are two key contentions: that there is insufficient exploration of the broader societal and cultural values orientating current sustainable development theory, practice and policy; and permaculture, as ethically informed social movement network that promotes a design system for sustainable interaction with the environment, is both a vision and strategy for sustainable development.

A qualitative, ethnographic case study approach was employed, using semi-structured interviews, in-field observation and permaculture document analysis. Research revealed perceptions of sustainable development were very similar to perceptions of permaculture, suggesting that most people saw permaculture as significantly contributing to their understanding of sustainable development. A key finding was involvement in permaculture arose from a plurality of instrumental goals and identification with social movement values, which in turn influenced perceptions of sustainable development. Several factors emerged as influential in perceptions of both sustainable development and permaculture: culture, level of involvement in permaculture, degree of initiative activity and the role of leaders and committed individuals within an initiative.

These findings are seen to have implications for future sustainable development policy and practice. The universality of sustainability issues within perceptions of both sustainable development and permaculture, and the establishment of independent projects and spontaneous adoption of instrumental aspects of permaculture in an area surrounding one research site suggest permaculture has potential to effect sustainable change in individuals and culture both within and outside of initiative parameters. Likewise, demonstrated embodiment of permaculture values in identity, action and lifestyle opens space for the inclusion of personal development and personal responsibility within the concept of sustainable development.

Acknowledgments

Without Chris Walker's kindness to a stranger I doubt I would have been able to complete this thesis. Your help, advice and insight made this research possible, and your wit and readiness to drink made it fun. A large number of my happy memories of Malawi feature you. Thank you.

I also wish to thank McJustice Betha. Thank you for your time and outstanding hospitality. You showed me a side of Malawi I wouldn't have otherwise seen and you gave me an experience I will never forget.

Thank you Kristof and Stacia Nordin for your excellent hospitality and for sharing your inspiring home and experiences with me. Your work gives me hope sustainable development is possible.

Thank you also to my supervisors Dr Rochelle Stewart-Withers and Dr Maria Borovnik for your constructive feedback on my thesis drafts.

Last, but not least, I wish a very heartfelt thank you to all the people who shared your time and stories as part of this research. It was a pleasure to meet you all and I cannot express how grateful I am for your participation.

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Abbreviations

AFROL	African Online News
AFSI	L'Aquila Food Security Initiative
AGRA	Alliance for a Green Revolution in Africa
AIS	Agriculture Input Subsidy (Programme)
ANAMED	Action For Natural Medicine
CFC	Chlorofluorocarbon
CFSVA	Comprehensive Food Security and Vulnerability ` Analysis
CIA	Central Intelligence Agency, United States of America
COP	Conference of Parties
DESA	Department of Economic and Social Affairs, United Nations
EAD	Environmental Affairs Department, Government of Malawi
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	Food and Agriculture Organisation
GTZ	German Society for Technical Cooperation
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
IFAD	International Fund for Agricultural Development
IFOAM	International Federation of Organic Agriculture Movements
IPCC	The Intergovernmental Panel on Climate Change
IUCN	The World Conservation Union
MAWO	Maziko Amoyo Wabwino Organisation (Foundation for a Better Life Organisation)
MDGs	Millenium Development Goals
MGDS	Malawi Growth and Development Strategy
MoEST	Ministry of Education, Science and Technology, Government of Malawi
MVAC	Malawi Vulnerability Assessment Committee
NAPA	National Adaptation Programmes of Action, Government of Malawi
NGO	Non-governmental Organisation
NSCM	National Seed Company of Malawi
NSO	National Statistics Office, Government of Malawi
PC	Permaculture
PRIA	Permaculture Research Institute of Australia
SDNP	Sustainable Development Network Programme, Government of Malawi

SFN	Sustainable Food and Nutrition (Programme)
SHN	School Health and Nutrition (Programme)
UNCSD	United Nations Commission on Sustainable Development
UNDP	United Nations Development Programme
UNSD	United Nations Division For Sustainable Development
UNEP	United Nations Environment Programme
UNEP-UNCTAD	United Nations Environment Programme and United Nations Conference on Trade and Development Capacity-building Task Force on Trade, Development and Environment
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
WCED	World Commission on Environment and Development
WFP	World Food Programme, United Nations
WHO	World Health Organisation
WSSD	World Summit on Sustainable Development

Chapter one: Introduction

1.1 Introduction

This thesis arises from a long held personal interest in the social movement network permaculture and through this theoretical lens focuses on the role of values and culture within sustainable development theory and practice. As such, this thesis is a study of people in Malawi practicing permaculture, their perceptions of sustainable development and whether involvement in permaculture contributes to sustainable development.

For the majority of government, non-governmental organisations (NGOs) and United Nations affiliated organisation programmes sustainable development provides a multi-issue, multi-sectorial rubric for development goals involving economic, social, cultural, political and environmental dimensions. Despite the ascendancy of sustainable development as a developmental norm and the creation of innumerable sustainable development initiatives and divisions within governments and the United Nations, poverty, hunger and environmental degradation persist and in some parts of the world such as Sub-Saharan Africa, these indicators are rising (Handley *et al.*, 2009). A significant issue within sustainable development policy and practice is that sustainable development as a concept remains contested (Jabareen, 2005) with much difference in perspective concerning what is development and *what* is to be developed, *when*, *how* and *where* development should occur, *why* sustainable development is sought and *who* is seeking this development (Adams, 2006).

Nitin Desai, Secretary-General of the 2002 Johannesburg Summit suggests “sustainable development is a bridge concept between economics, ecology and ethics” (UNCSD, 2007:2) and this quote highlights the importance of values within the questions that underpin sustainable development.

Permaculture is both an ethically-orientated global social movement network and a participatory system of design principles for sustainable living and self-provisioning of food. There is considerable conceptual similarity between the typically given dimensions of sustainable development: *environment*, *economy* and *society*, and the ethical tenets of permaculture: *Care for planet*, *Fair share* and *Care for people* and this, in turn, relates to two key contentions central to this thesis:

- i. The failure of sustainable development initiatives to address persistent poverty, increasing environmental degradation and to deliver on objectives is largely a result of an insufficient exploration and unclear expression of the core values underpinning and guiding human interaction with nature and obligation to future generations (Giddings, Hopwood & O'Brien, 2002:194-195; Quental, Lourenço & Nunes da Silva, 2009; Vucetich & Nelson, 2010).
- ii. Permaculture is an ethically orientated new social movement network based about a design system and principles for sustainable, equitable interaction with the environment, and offers an explicit vision and strategy for sustainable development.

This chapter details the research aim and objectives of this study and justifies why this research is considered needed. The context of sustainable development and permaculture in Malawi is also briefly introduced and this chapter concludes with an outline of the organisation of this thesis.

1.2 Research aim and research questions

This study explores understandings of sustainable development in the context of permaculture in Malawi. Values underpin sustainable development, shaping human interaction with the environment and obligation to future generations and many critics suggest exploration of these values is a neglected area in sustainable development research and practice (Hay, 2005:10-11; Jabereen, 2005:182; Adams, 2006:12, 14).

Permaculture, as a design system for sustainable interaction with the environment and as a social movement network, is orientated by ethics of *Care for people*, *Care for earth* and

Fair share and these ethics share considerable conceptual overlap with the three key areas of sustainable development typically represented in NGO and government policy and practice: *Society, Environment* and *Economy*. Based on this conceptual overlap, this research seeks to uncover whether involvement in permaculture has any influence on identity and behaviour and if permaculture influences perceptions of sustainable development. As such, the main research aim of this study is:

To explore whether permaculture contributes to sustainable development in Malawi.

This aim shall be explored through the following specific research questions and objectives:

1. What does permaculture mean to people involved in permaculture in Malawi?

Objectives:

- i. To describe understandings of permaculture.
- ii. To identify reasons contributing to participation in permaculture and factors that help or hinder participation.
- iii. To assess to what extent personal identity, ethical beliefs and definitions of sustainable development, are related to involvement in a permaculture initiative.

2. What does sustainable development mean to people involved in permaculture in Malawi?

Objectives:

- i. To describe understandings of sustainable development.
- ii. To identify factors that support or hinder sustainable development in practice.
- iii. To explore definitions of sustainable development and assess the efficacy of permaculture in contributing to sustainable development.

3. Does involvement in permaculture contribute to sustainable development in Malawi?

Objective:

- i. To evaluate permaculture's contribution to sustainable development in Malawi.

In order to meet the research aim and objectives of this study, a qualitative methodology was employed: specifically, an ethnographic case study involving three different research sites. Data from semi-structured interviews, in-field observation and permaculture literature analysis informed my discussion and conclusions, which are discussed in depth in Chapters six and seven. In line with qualitative methodology, quotes from research participants and excerpts from my field diary are used extensively in effort to lend depth and richness to my discussion and conclusions. The use of a qualitative methodology relates to justification for this research, which is discussed in the following section.

1.3 Justification for this research

There is currently a limited body of research regarding both permaculture (Veteto & Lockyer, 2008) and the role of values in sustainable development (Vucetich & Nelson, 2010) and this thesis seeks to contribute to these theoretical gaps, while also inverting the typical macro-level focus of sustainable development to a micro-level focus on individuals involved in permaculture. This ‘bottom up’ perspective hopes to reveal a more nuanced understanding of what sustainable development and permaculture means to people practicing permaculture in Malawi. This research is considered needed and timely for a number of reasons.

Firstly, this thesis recognises the broadness and contestation surrounding the concept of sustainable development (Hopwood, Mellor & O’Brien, 2005; Adams, 2006) and suggests much research and theory regarding sustainable development is typically top-down in conceptualisation and operation (Kothari, 2009:402). As such, this study employs both a micro and meso-level research focus through a qualitative, local-level ethnographic inquiry into perceptions of sustainable development and how this relates to engagement in the social movement network, permaculture. Permaculture, in turn, is seen to provide a meso-level context for sustainable development through an exploration of the influence of the social movement network’s activity in challenging existing unsustainable culture and behaviour (McAdam, 2003).

Similarly, it is believed there is a gap in theory that explores the values which inform the key questions of *what, where, how, when* and *why* that underpin sustainable development and, thus, further research is needed (Imran, Alam & Beaumont, 2011). Hay suggests that neglect in examining values has been a significant factor in the ‘failure’ of sustainable development initiatives to realise goals (2006:11) and this thesis then, is seen to add to the growing body of research and debate concerning the causal link between values and environmental practice (Kothari, 2009). Through an investigation into values and perceptions, this study also seeks to add to the ‘cultural turn’ (McAdam, 2003; Casas Cortés, Osterweil & Powell, 2008) in social movement theory: specifically, through exploration of whether participation in permaculture influences personal values, identity and understandings of sustainable development.

Finally, there is very little research concerning permaculture from any theoretical vantage point (Smith, Willetts & Mitchell, 2007; Veteto & Lockyear, 2004) despite growing global participation and increasing practice in southern and eastern Africa as part of sustainable development initiatives (Nyika, 2012). Permaculture is seen as both a vision and action plan for sustainable development and it is hoped this thesis will add to this much neglected area of study, alongside presenting an overview and assessment of a locally enacted alternative to current mainstream sustainable development initiatives (Kothari, 2009). As a place-based design system for sustainable interaction with the environment, context is of particular significance within permaculture and this is briefly discussed in the following section.

1.4 Context: Agriculture and sustainable development

Recent meetings and publications of major development agencies, such as the International Fund for Agricultural Development (IFAD), The World Bank, The Food and Agriculture Organisation of the United Nations (FAO) and the United Nations Development Program (UNDP), all recognise the ‘multifunctionality’ (IAASTD, 2009) of agriculture as a multi-sectorial concept that interconnects economic, environmental, social and cultural dimensions. Within this recognition of multifunctionality, increasingly

small-holder agriculture within development initiatives is pinpointed as a means to increasing food security and reducing poverty (World Bank, 2007; FAO, 2008; UNEP-UNCTAD, 2008). Alongside recognition of ‘multifunctionality’, there is also increasing awareness among academic and development agency research that the environmental and social consequences of top-down ‘agri-business as usual’ is furthering poverty and hunger for those most vulnerable (Reardon & Barrett, 2000; Setboonsarng, 2002; UNEP-UNCTAD, 2008). Similarly, there is a growing recognition and appreciation of the potential of organic agriculture to mitigate and redress these social and environmental impacts while also feeding people (Halweil, 2007; UNEP-UNCTAD, 2008; IAASTD, 2009; Mittal & Moore, 2009).

There has been considerable attention given to the benefits of organic agriculture and the negative social and ecological consequences of large-scale industrial farming with an increasing body of research suggesting comparable if not greater yields and ecological rehabilitation from organic agriculture, and greater employment opportunity than conventional monocropping (Shepherd, 1998; FAO, 2007; Halweil, 2007; Hewlett & Melchett, 2008; Marenja & Barrett, 2009). In practice, however, the majority of agricultural and sustainable development initiatives remain centred on economic considerations and are top-down, industrialised and large-scale with *The World Development Report 2008: Agriculture for Development* suggesting uncompetitive smallholders should exit agriculture and seek waged labour (World Bank, 2007; Li, 2009). In countries such as Malawi where agriculture dominates the economy and human settlement and the industrial sector is small with little likelihood of development at any large scale, the recommendation small scale farmers leave agriculture is unhelpful, if not misguided, given the dearth of waged employment and ever-present issues of food security (Harrigan, 2003; Cammack *et al.*, 2003).

This recommendation highlights what is seen as significant inconsistency in various development agendas: between increasing appreciation of the potential of organic agriculture as a strategy for both sustainable development and food security (FAO, 2007; IAASTD, 2009), and a conflicting, prevalent focus on developing an agriculture ‘industry’ typically irrespective of the social and economic costs involved in supporting

large scale agriculture. These overlooked social and economic costs include a raft of concerns such as increases in inequality, increased urban migration and accompanying burden on public infrastructure, increased pollution and resource use in monocropping and transporting food greater distances, social fragmentation and alienation, loss of culture, loss of indigenous species and biodiversity, and lower urban wages and higher costs of living arising from increased labour supply (Trainer, 1990; Pimbert, 2008; Christiaensen & Demery, 2010).

1.4.1 Sustainable development and agriculture in Malawi

In Malawi inconsistency between ostensible appreciation of organic agriculture and actual policy is apparent and evidenced in the Sustainable Food and Nutrition (SFN) Programme. In collaboration with partner agencies such as the UN World Food Programme (WFP), the Malawian government developed a low input model and manual and taught permaculture skills in primary schools as a strategy for addressing food insecurity through increased crop diversity and decreased reliance on costly inputs such as fertilisers and seeds (WFP, 2008). Despite the success of the SFN programme, however, commitment to the government input subsidy programmes remains high and government policy continues to stress the need for trade liberalisation and partnerships that develop agribusiness and industry (UNMalawi, 2009; FANRPAN, 2010), with a view to expanding Malawi's trading and export base (AFROL, 2009).

It is in this context of inconsistency between government rhetoric and practice and macro-level failure to deliver on sustainable development (Giddings *et al.*, 2002; Quental *et al.*, 2009; Vucetich & Nelson, 2010) that permaculture is situated. This thesis argues that permaculture promotes a vision of possible sustainable development that enables individuals and households to self-provision in a sustainable manner and, as will be outlined in the following section, permaculture also functions as a social movement network potentially with broader societal and cultural implications.

To reiterate the key contentions underpinning this thesis, mainstream sustainable development has been compromised by insufficient exploration of values guiding human interaction with the environment. Permaculture, in contrast, is underpinned by explicit ethics of care and equity that shape human interaction with the environment and each other and this ethical orientation potentially offers an alternative cultural paradigm to the increasing hegemony and effects of global neoliberal capitalism such as industrialised, monocropped agriculture (McMichael, 2007). This study, then, seeks to reveal the signifying role of permaculture with regard to perceptions of sustainable development, how the permaculture vision of sustainable development is embodied and enacted by practitioners, and whether this has any influence in a broader cultural context.

1.5 Overview of thesis

This chapter introduced my research inquiry and outlined my research aims and objectives, which are an exploration of whether permaculture contributes to sustainable development as understood by those involved in permaculture in Malawi. Theoretical gaps regarding bottom-up studies of perceptions of sustainable development and research regarding both the role of values within sustainable development and permaculture were identified as justification for this research. Next, a brief overview of sustainable development policy with regard to agriculture was presented, followed by a short introduction to permaculture in Malawi. This chapter concluded with a reiteration of two key contentions of this thesis: there is insufficient exploration of the values underpinning current sustainable development policy, and permaculture offers a potential vision and strategy for ethically orientated sustainable development.

Chapter two details the theory informing this study. Key trends in sustainable development theory are outlined, followed by a brief history and explanation of permaculture and an overview of social movement theory, concluding with a positioning of permaculture as a global social movement network.

Chapter three synthesises the previous chapter's theories of sustainable development, permaculture and social movements and explains how permaculture can be seen as an alternative to mainstream sustainable development. The significance of culture and values within this positioning are also explored.

Chapter four introduces and justifies the selection of a qualitative, ethnographic case study methodology. The ethical implications and potential limitations of this study and methodology are also discussed.

Chapter five offers an overview of Malawi alongside exploring in more depth the context of permaculture in Malawi. The research sites in this study are introduced: the *Never Ending Food* model permaculture village, Thyolo district schools participating in the Sustainable Food and Nutrition (SFN) Programme, and the *Maziko Amoyo Wabwino Organisation* (MAWO).

Chapter six details fieldwork and research responses, analyses research data, and discusses key findings in relation to the research aim and objectives of this study.

Chapter seven draws together key research findings and earlier theories described in Chapters two and three and offers conclusions regarding whether participation in permaculture contributes to sustainable development in Malawi. Chapter seven concludes with suggestions of possible future directions for research.

Chapter two: Theories of sustainable development, permaculture and social movements

2.1 Introduction

This chapter begins with a brief outline of current trends in sustainable development theory and practice with an especial focus on the values underpinning sustainable development, which in turn, builds context for research inquiry into whether involvement with permaculture influences perceptions of sustainable development. A brief history and explanation of permaculture follows from this, leading into an overview of new social movement theory, concluding with a positioning of permaculture as a social movement network engaged in promoting a vision and strategy for sustainable development.

2.2 Sustainable development

Sustainability with regard to the environment was first widely employed with the emergence of global organic agriculture movements in the mid to late 19th century (Holt & Reed, 2006), and sustainability as a concept emerged within macro-level policy in the late 1960s in a mandate by The World Conservation Union (IUCN). This IUCN conception of sustainability was later used in the 1972 *United Nations Conference on the Environment* in Stockholm, which sought to acknowledge and address increasing evidence of anthropogenic environmental degradation as a result of economic growth and industrialisation (Adams, 2006). In 1987, with the publication of the seminal report of the Brundtland Commission: *Our Common Future* (WCED, 1987), sustainable development was established as a fixture in development theory, policy and practice. Table 1 outlines key events and trajectory in the development of sustainable development, where it can be seen from this initial linking of economy and environment ‘sustainability’ has evolved into ‘sustainable development’ to become a fundamental norm in development (Park, 2008) and a normative-conceptual link between the environment and development.

Table 1: Key environmental conventions, commissions, reports and agreements

Year	Organisation and agreements	Details
1972	<p><i>The United Nations Conference on the Human Environment</i> (The Stockholm Conference)</p> <p>Resulted in:</p> <ul style="list-style-type: none"> • <i>The United Nations Environment Programme (UNEP)</i> • <i>The Montreal Protocol on Substances that Deplete the Ozone Layer (1987)</i> 	<ul style="list-style-type: none"> • First major UN conference about global environmental issues. • Key issues: ozone depletion and use of CFCs. • Saw the creation of national Ministers, Departments and Agencies for the environment (Haque, 2000; Adams, 2006).
1983	<p><i>World Commission on Environment and Development</i> (later known as <i>The Brundtland Commission</i>)</p>	<ul style="list-style-type: none"> • Created to address global resource depletion, environmental degradation and consequences on economic and social development. • Was established to recommend strategies to 2000 and beyond. • First tacit acknowledgment of the need for cooperation between developed and developing countries in addressing environmental issues. (Dale, 2001).
1987	<p><i>Our Common Future</i> (later known as <i>The Brundtland Report</i>)</p>	<ul style="list-style-type: none"> • Produced the most well-known definition of sustainable development: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987:43).
1990	<p><i>The Intergovernmental Panel on Climate Change (IPCC) First Assessment Report</i></p>	<ul style="list-style-type: none"> • Concluded human activity was leading to an increase in atmospheric concentrations of greenhouse gases and a resulting increase in atmospheric temperature over the past 100 years. • Provided the basis for the United Nations Framework Convention on Climate Change (IPCC, 2007).
1992	<p><i>The United Nations Conference on Environment and Development (UNCED)</i> (Also known as <i>Earth Summit</i> and <i>Rio Summit</i>)</p> <p>Resulted in:</p> <ul style="list-style-type: none"> • <i>The Rio Declaration on Environment and Development</i> • <i>Agenda 21</i> • <i>The Statement of Forest Principles</i> • <i>The United Nations Framework Convention on Climate Change (UNFCCC)</i> • <i>The United Nations Convention on Biological Diversity</i> 	<ul style="list-style-type: none"> • Focused on four key issues: alternative energy to fossil fuel, increased focus on public transport, increased water scarcity and increased use of toxic materials in production (UNEP, 1997; UNDSO, 2011).

	<ul style="list-style-type: none"> • <i>The United Nations Commission on Sustainable Development (UNCSD)</i> 	
1994	<i>United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa</i>	<ul style="list-style-type: none"> • Signalled increased and broadened awareness of climate change, highlighting a specific area of climate change and need for mitigation. • Considered economic, social and environmental issues and is sometimes considered the ‘first’ international sustainable development treaty (Chasek, 1997).
1996	<i>IPCC Second Assessment Report: Climate Change 1995</i>	<ul style="list-style-type: none"> • Saw the creation of 3 working groups within the report. • Reiterated the findings of the first report with additional attention paid to the effect of anthropogenic aerosol emissions. • Stressed increase confidence in findings as a result of improved modelling technology and techniques (IPCC, 2011). • Generated some controversy concerning the economic valuation of human life which valued developed country's lives much higher than others (Pearce, 1995).
1997	<i>The Kyoto Protocol</i>	<ul style="list-style-type: none"> • Entered into force in 2005 and in 2009 has been ratified by 187 states. • Sought to establish targets for greenhouse gas target emissions.
2000	<i>The United Nations Millennium Declaration</i>	<ul style="list-style-type: none"> • Saw the creation of the Millennium Development Goals which were adopted by UN member states and a number of international organisations, to be achieved by 2015: <p>Goal 1: Eradicate extreme poverty and hunger Goal 2: Achieve universal primary education Goal 3: Promote gender equality and empower women Goal 4: Reduce child mortality rate Goal 5: Improve maternal health Goal 6: Combat HIV/AIDS, malaria, and other diseases Goal 7: Ensure environmental sustainability Goal 8: Develop a global partnership for development (UNDP, 2011).</p>
2001	<i>IPCC Third Assessment Report (TAR)</i>	<ul style="list-style-type: none"> • Increased attention to themes of development, equity and sustainability (DES) as crucial in policy addressing climate change (IPCC, 2001).
2002	<i>The UN Decade of Education for Sustainable Development (2005 -2014)</i>	<ul style="list-style-type: none"> • Attempted to highlight the link between awareness, education and environmental degradation.
2002	<i>Johannesburg World Summit on Sustainable Development (WSSD)</i>	<ul style="list-style-type: none"> • World's largest UN summit. • Held to review progress since the Rio Summit in 1992. • No binding agreement reached on renewable energy target. • 5 priority areas identified; health, water, energy,

		agriculture and biodiversity (UNCSD, 2007; UNDSO, 2011).
2007	<i>IPCC Fourth Assessment Report (AR4)</i>	<ul style="list-style-type: none"> • Reiterated link between human activity and climate and change and emphasised need for reducing anthropogenic greenhouse gas emissions (IPCC, 2007).
2009	<i>United Nations Climate Change Conference, Copenhagen (COP15 to the UNFCCC)</i>	<ul style="list-style-type: none"> • Reiterated commitment to the Kyoto Protocol and recognition of anthropogenic climate change. • Produced the Copenhagen Accord- a non-legally binding commitment to reducing and mitigating greenhouse gas emissions. • Widely considered a failure with regard international accord and commitment to addressing climate change.
2010	<i>United Nations Climate Change Conference, Cancun (COP16 to the UNFCCC)</i>	<ul style="list-style-type: none"> • Emphasis on transparency and commitment to reducing emissions in effort to keep temperature increase below 2°C. • Near consensus regarding strong commitment to non-legally binding reductions in emissions. • Agreed to establish Green Climate Fund to assist developing countries adapt to climate change.
2011	<i>United Nations Climate Change Conference, Durban (COP17 to the UNFCCC)</i>	<ul style="list-style-type: none"> • UN member countries agreed to adopt a legally binding commitment to reducing emissions no later than 2015 to take effect in 2020.

Source: Author

There has been much discussion concerning the imprecision, ambiguity, simplicity and implications of the most widely referenced definition of sustainable development, produced by the Brundtland Commission in 1987: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987:43).

The linking of ‘sustainable’ with ‘development’ has raised the suggestion of an ‘ethical paradox’ between *sustainable*, connotative of indefinite continuation and *development*, connotative of change and progress (Jabareen, 2005; Redclift, 2005). The uncertainty and confusion surrounding the nature, scale and temporality of sustainable development has, in turn, spawned innumerable variations on definitions of sustainable development in literature and organisations (Sutton, 2004; Jabareen, 2005; Kates, Parris & Leiserowitz, 2005), leading to the criticism sustainable development as an overarching multi-sectorial

normative rubric for development is conceptual and superficial rather than operational (Redclift, 2005).

In 1999 the US National Academy of Sciences published *Our Common Journey: A transition toward sustainability* which, after reviewing a number of commentaries on meanings of sustainable development among various organisations and institutions, identified four key areas of difference regarding definitions of sustainable development:

- i. what is to be developed
- ii. what is to be sustained
- iii. differing linkages and strength of linkages between what is to be sustained and what is developed
- iv. what time frame is meant by 'the future' (NRC, 1999:23).

Alongside these, three further areas of difference can also be considered:

- i. the degree of limitation on development imposed by environmental and ecological factors (Nurse, 2006:34)
- ii. where activity should occur (Morse, Vogiatzakis & Griffiths, 2009)
- iii. why sustainable development is sought (Hay, 2005:313).

These key questions of *what*, *when*, *how*, *where* and *why* are central considerations in that they bring an epistemological perspective to sustainable development, drawing attention to the ideological and political content of sustainable development alongside economic and ecological considerations, (Pezzoli, 1997). How they are addressed leads to another key question of *who* is seeking sustainable development, all of which returns focus to the values and ethical position underpinning human interaction with nature.

2.2.1 Values in sustainable development

The role of values in sustainable development was highlighted by Commission Chairman of the 18th session of the Commission on Sustainable Development, Luis Alberto Ferraté Felice, who suggested “sustainable development requires a transformation of values and principles that directly influence development strategies and lifestyles” (DESA, 2010a). In this sentiment, Felice alluded to an increasing focus in sustainable development on production and consumption patterns and lifestyle, particularly in developed nations (DESA, 2010b) and this was seconded in Glasby’s assertion “our goal is not to achieve sustainable development, as that's no longer possible, but to minimize the effects of demonstrably unsustainable development” (2008:21). Similarly, the importance of values can be seen when determining future and current ‘need’, where determining future need is speculative and the needs of, for example, a Malawian village woman without access to education or healthcare are likely to be quite different from an urban, professional New Zealander.

Broadly speaking, attitudes toward the environment lie somewhere along an anthropocentric-ecocentric spectrum with positioning determined by what is accorded intrinsic value, or inherent worth, and what has utility value, or is of use, to humans. Within these polar positions are a range of perspectives and differences which are outlined in Table 2, although at an individual level and in practice there is often a blurring of position where common goals of environmental protection supersede motivation and underlying ethics. As such, there can often be seen a supportive relationship between radical acts of deep ecology activism and more conservative approaches of enlightened anthropocentrism seeking legislative change, with activism generating public awareness and support for social and political reform (O’Riordan, 1981; van Wensveen, 2005).

Table 2: Value positions toward the environment

Ethical position	Key features
Enlightened (prudential) anthropocentrism, or shallow ecology	<ul style="list-style-type: none">• preservation of biotic systems and other species is based on its use value to humans rather than intrinsic worth.• anthropocentric with human interests at the centre of environmental concerns• recognises the environmental limits and the pragmatic need to protect life support systems but also views exploitation of nature as necessary for human

	<p>development.</p> <ul style="list-style-type: none"> • sees technology, science and managerial efficiency as key tools in environmental protection and problem solving. • typically the approach underpinning most current mainstream sustainable development policy (O'Riordan, 1981; Martin & Mighall, 2000)
Biocentrism	<ul style="list-style-type: none"> • ecocentric. • moral considerability derives from being alive and having teleological 'ends' or interests such as flourishing and propagation of species; therefore all living species are given moral considerability (Schmidtz, 1998; Sandler, 2007). • individualist biocentrism focuses on living individuals within a species (Varner, 1998). • holistic biocentrism focuses on communities or ecosystems of species • some proponents suggest species egalitarianism (Taylor, 1983).
Deep Ecology	<ul style="list-style-type: none"> • a quasi-spiritual philosophy of human-nature interaction where ecological consciousness and awareness of being part of a delicately balanced ecosystem rather than separate (Lovelock, 2000). • self-realisation is typically a goal of deep ecology (Naess, 1973). • ecocentric in position where the good of the system is superordinate to individual considerations and all exploitation of nature should stop • all individuals, species and habitats are seen as having intrinsic worth and should be respected and preserved. Sentience is not a requirement of moral considerability and exploitation of nature is morally wrong (Carson, 1962; Naess, 1973; Devall & Sessions, 1985).
Environmental virtue ethics	<ul style="list-style-type: none"> • anthropocentric in the sense human flourishing through virtue is the focus of environmental protection. • underpinned by ethical questions such as 'what sort of person should I be?' • circumvents rights or duty-based support for environmental protection in focusing on personal character traits that allow for human flourishing (<i>eudaimonia</i>). • some accounts are pluralistic, allowing for the teleological 'natural goodness' of living species as basis for moral regard. • Socrates, Plato and Aristotle all saw virtue as central to ethics and an ethical life with some varying agreement regarding education and practical experience as means for gaining wisdom and living well in order to flourish. • often quasi-spiritual with some proponents suggesting union and harmony with nature necessary for a good life (Nussbaum, 1993; Cafaro, 2001)
Christian stewardship	<ul style="list-style-type: none"> • anthropocentric, with humanity seen as separate or above nature. • based on the religious view of man as caretaker of Earth; Book of Genesis: 1, 28; "and God said unto them, 'Be fruitful, and multiply, and replenish the Earth, and subdue it; and have dominion over the fish of the sea, and over the birds of the air, and over every living thing that moves on this Earth'" (White, 1967). • claims anthropocentrism and belief in man's ability to 'dominant' nature in environmental policy is a legacy of Judeo-Christian thought (Martin & Mighall, 2000; DesJardins, 2006).
Ecofeminism	<ul style="list-style-type: none"> • ecofeminism is pluralist although most theorists agree environmental issues such as exploitation and subordination are linked to the exploitation and subordination of women and reflect male bias and oppression. • as such, the entire framework for current environmental policy needs to be examined and adjusted to include considerations of gender and oppression. • is typically related to 'ethics of care' where some suggest women are 'naturally' more caring than men because of childbirth and care and are closer

	to nature through the predominance of women in direct contact with nature in agricultural work and as such are better positioned to ‘champion’ the environment (Warren, 1990; Hessler & Willot, 2002).
Social ecology	<ul style="list-style-type: none"> • suggests ecological degradation arises from deep seated societal problems embedded in political, economic and cultural systems and these must be reevaluated and changed. • sees current dominant hierarchical class systems as informing human domination of nature. • calls for a ‘natural spirituality’ that recognises human moral obligation to reduce suffering of non-humans and embrace an appreciation of wilderness and biological diversity (Bookchin, 1993).

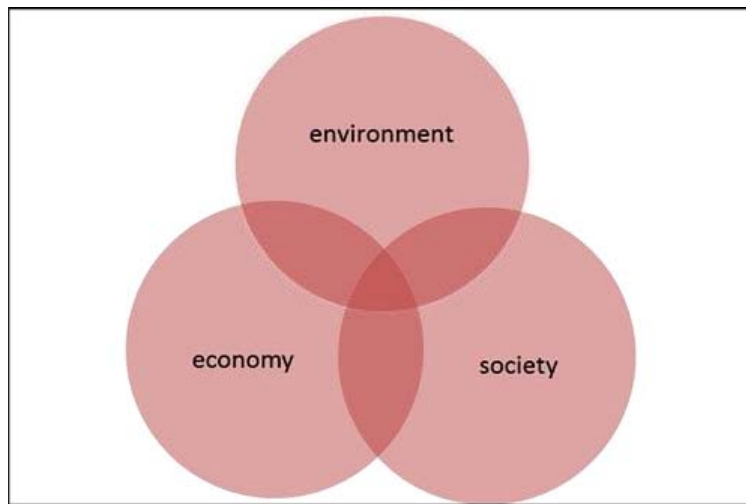
Source: Author

The majority of sustainable development effort to date is anthropocentric, typically expressed through deontological measures such as punitive legislation regulating industrial waste or incentive-based policy such as carbon credits (Newton, 2003) underpinned by utilitarianist ideals of maximising beneficial consequences for the greatest number of people (DesJardins, 2006). Newton (2003) critiques these approaches suggesting they are based on a view of sustainability as an ‘end’ to be achieved through political, managerial or technical ‘means’ which are presented as scientific, objective and rational, with governmental decisions constrained by the concerns of the present voting public. There is however, widespread agreement science and economics are far from value or agenda-free (Martin & Mighall, 2000) and inadequate exploration of assumptions and values within this approach, which Keiner describes as a lack of “a profound theoretical basis for the justification for sustainable development” (2004:384), has contributed to the ‘failure’ of sustainable development to date. As such, global international environmental policies operating as normative frameworks, such as the Millennium Development Goals (MDGs), risk being hegemonic, heterogenising and overconfident in technocratic solutions when they are without an examination of the ethics and global forms of governance that underpin the ‘singular grand narrative’ of sustainable development (Okereke, 2008).

2.2.2 Elements of sustainable development

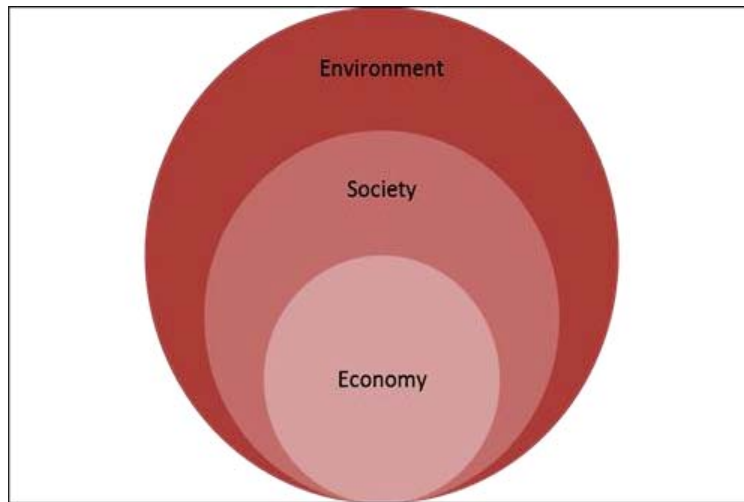
Among mainstream development organisations there is some agreement as to the elements of sustainable development: society, economy and the environment. The most widely used visual representation, and that in the past traditionally adopted by the UN and affiliated agencies, is of three overlapping, equally sized circles which seek to emphasise the interconnectedness of the three elements of sustainable development (see Figure 1). This has also often been represented as three equally sized pillars, supporting an overarching beam of development. This anthropocentric visualisation of sustainable development contrasts with ecocentric perspectives, including that of permaculture, which places society and economy as subordinate to environment (see Figure 2).

Figure 1: An anthropocentric representation of sustainable development



Source: Adapted from Adams, 2006.

Figure 2: An ecocentric representation of sustainable development



Source: Adapted from Adams, 2006.

A common criticism of anthropocentric, ‘equal element’ representations is that it is a ‘weak’ vision of sustainability where equal weighting and implicit fungibility are given to the elements of sustainable development, economy is separate from society, and economic growth is considered necessary to alleviate poverty (Adams, 2006). The World Bank’s capital stock model is an example of this which suggests trade-offs between elements are possible as long as capital stock remains intact (Keiner, 2004).

A further criticism of sustainable development models is based upon the demarcation of the dimensions of society, economy and environment and that separation of the dimensions is an artificial abstraction that reduces and simplifies layers of complexity, where in reality society, economy and environment may occupy a plurality of spatialities, temporalities and scales (Giddings, Hopwood & O’Brien, 2002).

The macro-level focus of most sustainable development models and policies also draws criticism of the little attention given to the *where* of development (Morse, Vogiatzakis & Griffiths, 2009), the role of individual agency and responsibility within sustainable development and the lack of consideration of qualitative dimensions such as individual happiness and flourishing. In this regard, an increasing number of scholars, particularly in the field of environmental virtue-ethics (see Table 2) see sustainable development as

including personal development and is an expression of personal ethics (Leopold, 1970; Newton, 2003; DesJardins, 2006; Hay, 2010).

Haughton (1999), in tacit recognition of the role of ethics within sustainable development, has developed five principles of equity as a guiding vision for sustainable development and suggests they are applicable irrespective of whether an issue or situation is classified as society, environment and/or economy:

- i. futurity; intergenerational equity
- ii. social justice; intra-generational equity
- iii. transfrontier responsibility; geographical equity
- iv. procedural equity; people treated openly and fairly
- v. interspecies equity; the importance of biodiversity (cited in Hopwood, Mellor & O'Brien, 2005:40).

It is here permaculture, as a vision and strategy for sustainable development, can be seen as a bridge between micro and macro-level theory and practice in that permaculture is a place-based system of design principles underpinned by ethics that is potentially applicable both personally, as a means to self-provision food in a sustainable, low cost way, and in a broader societal and environmental sense as a social movement network engaged in promulgating alternatives to non-sustainable agriculture and culture. The following section further explores these key concepts in permaculture and how permaculture is engaged in fostering what is contended is genuine sustainable development.

2.3 Permaculture

In 1981 co-creator of the permaculture design system, Bill Mollison received a *Right Livelihood Award*. In his acceptance speech he said “all my life we've been at war with nature. I just pray we lose that war. There are no winners in that war” (Mollison, 1981). This quote provides an apt segue into a discussion of permaculture as a human

‘decentred’ vision and strategy for sustainable development, and as a response to the increasingly felt environmental impacts of economic growth-led development, largely under the rubric of the neoliberal paradigm, which has framed much of development effort to date (for example, see Trainer, 1990; Shiva, 1992; McMichael, 2007). The following sections critically explore the sociology of permaculture and social movements in order to provide theoretical context for positioning permaculture as a social movement network engaged in sustainable development.

2.3.1 A history of permaculture

Permaculture as a coherent and explicit set of design principles arose from a collaborative effort in the early 1970s between Bill Mollison, a senior lecturer in Environmental Psychology at the University of Tasmania, and his student, David Holmgren. Much of the impetus for their collaboration arose from concern with impending peak oil consumption and concern with the increasingly evident environmental consequences of western production and consumption patterns (Holmgren, 2003).

In 1976 the pair published an article about permaculture in the Tasmanian magazine *Organic Farmer and Gardener*. This article generated considerable interest from the public and media and based on this Mollison and Holmgren began to tour and talk about their holistic design system based on the following 12 design principles:

1. observe and interact
2. catch and store energy
3. obtain a yield
4. apply self-regulation and accept feedback
5. use and value renewable resources and services
6. produce no waste
7. design from patterns to details
8. integrate rather than segregate
9. use small and slow solutions

10. use and value diversity
11. use edges and value the marginal
12. creatively use and respond to change (Holmgren, 2004:7-18).

Four years later, in 1978, following on from Mollison and Holmgren's successful touring, the seminal book *Permaculture One* was published. The diffusion of permaculture has been remarkable in its speed and breadth; by the mid-1980s ten Australian permaculture groups had grown to over 80 international organisations (Grayson & Payne, 2007). Today permaculture has become a global movement with over 400 000 projects in place and over one million people trained in the Permaculture Design Course (PDC): the standardised two week introductory course which outlines the principles of permaculture, ethics, and design principles, and in a broader sense details and demonstrates, typically through hands-on student experience, a number of organic farming techniques (Ayesh, 2005).

2.3.2 Permaculture and organic agriculture

As a set of design principles for organic agriculture there is considerable overlap between permaculture and the organic agricultural principles outlined by the International Federation of Organic Agricultural Movements (IFOAM) with both underpinned by a holistic and ethical approach to food production that incorporates issues of social justice and care for the ecosystem in its entirety (IFOAM, 2010; PRIA, 2011). An active global network of permaculture activity underpinned by a permaculturalist identity and ethical orientation, a focus on the local and small-scale which to some extent, although not entirely, limits potential for large-scale production and market participation, accompanied by a lack of concern with market-recognised organic certification are the chief features that distinguish permaculture from other organic agriculture movements.

As an organic agricultural system, permaculture seeks to mimic and hasten natural processes such as succession and plant guilds, avoids as much as possible the use of external inputs such as chemicals, controls pests through natural methods such as

companion planting, strives for complete reuse of waste products, and makes use of natural land contours to harvest rain water, using on average a fifth less water than industrialised agriculture, which makes it particularly suitable for arid terrain (Holmgren, 2003; Morrow, 2006; Smith *et al.*, 2007; PRIA, 2011). Vigorous rehabilitation and ecosystem resilience are key aims of permaculture which makes it suitable for marginal, exploited and degraded soil and water areas such as those in sub-Saharan Africa. A well-designed and functioning permaculture plot over time is typically not labour intensive and means it is well suited to areas where, as a result of disease and high mortality rates, households often support a large number of dependants, making time and energy for household food production a consideration. Permaculture design principles are applicable to any size plot which has relevance for households with minimal land or space for cultivation.

From this detailing of the organic agriculture aspect of permaculture, the following subsection introduces permaculture ethics in order to lay the foundation for a positioning of permaculture as a social movement network.

2.3.3 Permaculture ethics

In its original inception permaculture was a portmanteau of permanent and agriculture and was defined as an “integrated or evolving system of perennial or self-perpetuating plant and animal species useful to man” (Holmgren, 2004:1). This has definition has since been revisited to reflect the broadening of permaculture's original focus and Holmgren now defines permaculture as:

consciously designed landscapes which mimic the patterns and relationships found in nature while yielding an abundance of food, fibre and energy for provision of local needs (2004:1).

Holmgren elaborates on this definition, explaining,

People, their buildings and the ways in which they organise themselves are central to permaculture. Thus, the permaculture vision of permanent or sustainable agriculture has evolved to one of permanent or sustainable culture (2004:1).

Similarly, since inception, three ethical underpinning tenets of permaculture have been explicated:

- *Care for the Earth*
- *Care for people*
- *Fair share* (Morrow, 2006:11).

From the above, there emerges then, a set of key concepts integral to permaculture: *people, nature, culture, context, permanence, provision of needs, design, learning and equity*. In essence, permaculture is a set of design and ethical principles that extend beyond the boundaries of food production and to some degree may be considered an applied philosophy and, as such, a focal point for identity and action with an explicit definition, vision and blueprint for sustainable self-provisioning of food underpinned by ethics of equity and care for people and the planet.

Permaculture is also seen to add an interesting nuance to ethics of care theory, a perspective often associated with a branch of feminism that suggests dominant utilitarian and deontological ethical models that seek to further ideals of moral rights, duties and obligations are constructed under the rubric of universal, abstract and rationalist principles. These principles, in turn, are underpinned by assumptions of individual autonomy and justice, codified in legal rights and enforced through laws (Gilligan, 1982; Schmidtz & Willot, 2002; DesJardins, 2006; Okereke, 2008).

While permaculture was not born of feminist or academic thought, there is some conceptual overlap between permaculture ethics and ethics of care theory: both are associated with more ‘female’, qualitative traits such as caring and interpersonal relationships, and morality is based on contextualised concepts such as care, cooperation

and community (Merchant, 1980; Noddings, 1984). Bellacasa adds to this suggesting permaculture's ethical orientation does not begin from a normative orientation but rather, both theory and praxis are grounded in "concrete relationalities" (2010:152) wherein personal ethics are linked to the collective through every day lifeworld experiences of sustainable self-provisioning and humans are decentered within the ecosystem in recognition of the interdependency of all living and non-living elements. This has considerable salience with regard to the main research aim of this study and in particular research objective one (see Chapter 1:4) which is concerned with whether engagement in permaculture influences personal identity, ethics and values. Ethics are also relevant with regard to positioning permaculture as a social movement and the following section outlines social movement theory as context for positioning permaculture as a social movement network.

2.4 Social movements

This study seeks to explore perceptions of sustainable development from a relational social movement network perspective which recognises the plurality, embeddedness and articulations of actors within permaculture (Diani, 2002a; McAdam, 2003). The following section first offers a definition of social movements, then briefly outlines relevant concepts in past and current social movement theory that have led to social movement network theory, which can be seen to act as a bridge between structural and rationalist accounts of collective behaviour (Passy, 2003). This section concludes with a positioning of permaculture as a global social movement network which in turn serves as a platform for a research focus on personal identity, value construction and meaning attribution with regard to sustainable development in the context of permaculture.

2.4.1 A definition of a social movement

There is a plethora of definitions of social movements with some divergence and dissent in perspective and details. Tarrow writes a social movement is "a collective challenge by

people with common purposes and solidarity in sustained interactions with elites, opponents and authorities” (1998:4), while Johnston and Klandermans (1995) suggest social movements may function as signifying agents and are “shaped by culture and at the same time themselves form and transform culture” (cited in d’Anjou & Van Male, 1998:208). Snow and Benford add a temporal perspective by locating social movements in ‘clusters’ of organisations that are contingent on prevailing culture and structures, which they call ‘frames’ that are specific to a certain period of time, such as the rise of global environmental activism (1992:136-138). More recently, networks have become an important concept in social movement theory, with Diani (2000b) suggesting it is the network of social movement organisations, or individuals, informally linked through collective action and shared identity that defines new social movements.

Although there can be seen some disagreement in underpinning theoretical focus and details relating to degree of political engagement and activity, organisational structure, temporality and space; words and ideas like *collective*, *identity*, *change*, *shared beliefs*, *action* and *networks*, tend to feature in the majority of definitions of social movements and through these a concept of social movements begins to emerge. For the purpose of this thesis then, a social movement is defined as:

an informally or formally organised collective or network of organisations or individuals with participation based about one or more of the following criteria:

- *shared values or identity*
- *concern and sense of solidarity with a common issue or situation/movement*
- *engagement in action to change an aspect of a current situation* (Melucci, 1989; Johnston & Klandermans, 1995; Tarrow, 1998; Diani, 2000b) .

A somewhat neglected area in social movement theory concerns movements not actively engaged in protest or overt effort to change some aspect of society. While a number of commentators suggest protest, conflict or mobilisation about an issue or institution provides a focal point for mobilisation, Melucci (1989) suggests social movement activity is increasingly not based on open or political conflict or mobilisation but rather is operative in the sphere of cultural production with regard to self-identity and engagement

in efforts to change norms or patterns of behaviour. It is in this conception of social movements that permaculture is located, that is, as a network of individuals and initiatives, linked through shared action and possibly also shared identity and values, engaged in promoting an ecocentric attitude toward the environment. This perspective of social movements can also be seen to link the production and dissemination of culture to social movement activity and this is salient to this research in that permaculture, as a social movement network, is engaged in challenging prevalent cultural norms and behaviour.

Similarly, Della Porta and Diani (2006) add to this, suggesting personal transformation is increasingly the focus of social movement and network activity. This perspective is relevant to the main research aim of this study which seeks to explore meaning construction, alongside the possibility of shifting personal values, in the context of participation in permaculture. Permaculture in this respect, is seen to engage in a more subtle strategy for change, not through overt protest, political engagement or normative morality and identity, but rather through *embodied morality*, wherein personal practice, or what Bellcasa describes as ‘concrete relationalities’ (2010:152), links individuals to collective identity. In this respect permaculture can be seen as an ‘affirmative’ social movement, based upon enacting sustainable behaviour and culture, rather than a ‘protest’ social movement, which engages in protest or resistance to unsustainable behaviour and aspects of society (Lifton, 2009:134).

The earlier definition of a social movement in this section is deliberately broad in order to highlight the conceptual overlap of various theories of collective behaviour, which the following subsection outlines as context for the positioning of permaculture as a global social movement network.

2.4.2 A brief history of social movement theory

Broadly speaking, the study of social movements emerged from the civil rights and protest movements of the 1960s in response to the perceived shortcomings of

functionalist sociological theories concerning collective behaviour. These analyses were seen to offer little explanation for individual and group motivations and wider structural contexts and instead tended to view collective action and social conflict as “aberrations [and] evidence of deviancy in an otherwise well-functioning social system” (Mayo, 2005:56). Theoretical responses to the perceived inadequacies of early social movement theory included rationalist social movement theories of collective behaviour such as Rational Actor Theory, Resource Mobilisation Theory and Political Process Theory.

Rational Actor Theory and Resource Mobilisation Theory tended to focus on individual agency (Ferree & Miller, 1985; Ferree, 1992; Passy, 2003) and viewed access to resources as a basis for movement construction, definition and collective protest or action (for example, see McCarthy & Zald, 1973; McClurg Mueller, 1992). In contrast, Political Process Theory focused more on the role of ‘political elites’ and access to power issues within collective action (for example, see McAdam, 1999; Tarrow, 1998). An emphasis on the *how* of collective action largely informed these earlier social movement theories (Diani, 2000a) and in the 1970s and 1980s criticism of this rationalist theoretical neglect of the *why* underpinning collective action led to the rise of a more structuralist account of collective behaviour with New Social Movement (NSM) Theory.

2.4.3 New social movement theory

NSM theory, as it relates to development, is typically claimed by post and alternative development theorists who see place-based, self-organisation as an alternative to mainstream development that is typically associated with globalised, neoliberal, capitalist hegemony and is top-down in orientation (Diani, 2003; Mathews, 2004; McMichael, 2007; Sidaway, 2008).

Earlier writers such as Touraine (1985), Habermas (1975), Castells (1977) and Melucci (1980) detailed social movements that were participatory, often self-organising and bottom-up, and centred about shared identities, new class and power issues, and single or related social or lifestyle issues, such as women’s rights and environmental crisis

(Buechler, 1995; Tarrow, 1998; Clark, 2001; Mayo, 2005). Inglehart (1990) adds to this suggesting distinction between old and new social movements, describing *old* social movements as underpinned by issues of class-based social conflict and peopled by working class with materialist values that prioritised economic and physical development, growth and security. This contrasts with *new* social movements which he sees as tending toward middle class and post-materialist values that prioritise social issues such as environmental and women's movements, freedom of expression and non-economic qualities of social and physical environments.

Considerable disagreement, exists however, as to the 'newness' of NSMs, with critics suggesting earlier social movements were also based about shared identities and issues (Polletta & Jasper, 2001) and NSMs are also concerned with material and class issues. Melucci (1995), one of the early proponents of NSM theory, has since suggested 'new' was merely used as a heuristic tool employed in a specific time to highlight difference and distinguish between past and emerging social movements and collective action theory (cited in Diani, 2000a:391).

In contrast, Diani asserts it is the position of NSMs within *networks* of relationships that cross cut different identities, issues and spaces, that may lend credence to the 'newness' of social movements (2000a, 2000b). Wieviorka (2005) builds on this, suggesting NSMs have been superseded by *global* movement networks which recognise the plurality of identities held by participants and multi-dimensional issues addressed within and between movements. This, in turn, he sees as evidence of the post-modern decline of the grand narrative, and increasingly social movement networks are garnering academic attention as both a tool and theory for analysis.

The following subsection briefly discusses how social movement network theory synthesises earlier social movement theories and, in turn, serves as a theoretical basis for positioning permaculture as a global social movement network.

2.4.4 Social movement network theory and permaculture

The ‘Meluccian challenge’, as Gillan suggests, is not to homogenise social movements or view the collective dimension of social movements as having a unified *raison d’etre* (2008:248) and Gamson and Meyer (1996) underline this, reminding social movements are “a field of actors, not a unified entity” (cited in Gillan, 2008:250). As such, when globalised social network theory is seen as an incorporation and extension of past theories of collective behaviour, participation may be seen as relational, contextualised and an ever-changing interplay between moral commitment, identity-affirming behaviour and instrumental goals (Klandermans, 2001; Passy, 2003; Gillan, 2008). Where *movement* may imply cohesion, and possibly a single reason for participation and single locus, *network* implies multiple interconnections, spatiality and temporality, and highlights both the plurality of identities and agency of an individual within a social movement network. Passy (2003) adds to this, underlining the multifunctionality of social movement networks that reinforce or contribute to individual identity both before and during participation and action, suggesting networks connect rational and structural accounts of collective behaviour and there is likely plurality with regard to rationale for participation.

The view of social movement networks outlined above fits with a view of permaculture as an ethically informed social movement that promotes a design system for low input, sustainable living. To return to the multifunctionality of agriculture (see Chapter 1:5), reasons for participation in permaculture may be plural and vary according to individuals. Participation may arise from any number of not necessarily mutually exclusive reasons including instrumental concerns such as learning techniques for sustainable, low input agriculture, or identification with permacultural ethics and values. As such, a positioning of permaculture as a social movement network is conceptually linked to the research aim of this thesis which, as part of an exploration of the influence of permaculture on personal identity, behaviour and perceptions, seeks to identify reasons for participation in permaculture.

Delueze and Guattari’s (1987) metaphor of a rhizome, seen as self-organising, decentralised multiple connections of communication, interest and activity, is increasingly

being applied to social movement network research and analysis (Chesters & Welsh, 2005). Within the metaphor of a rhizome is the suggestion the boundaries of a social movement network may not necessarily be limited to collective action but also individual acts, somewhat akin to Ghandian acts of protest by example. Similarly, a focus on the individual within social movement network theory is seen to add nuance to Melucci's (1995) characterisation of new social movements as practising the social goals that the movement is seeking to achieve, and this has relevance to permaculture which promotes personal sustainability.

Social movement networks are also seen as arising from advancements in communication technology and increased international mobility, and suggestions NSMs are largely an effort to bridge the national and global (Del Pozo Avino, 2006; Hintjens, 2006) tacitly emphasises the increasingly global and networked nature of social movements. In line with this, Clark suggests global social movements have shifted from an emphasis on 'thinking globally, acting locally' to 'think and act, locally and globally together', with this shift indicative of globalised social movement networks bringing perspective to a more 'glocalised' level (2001:18; Wellman, 2002). This observation is also seen to have salience with regard to permaculture as a globally informed social movement that is locally enacted as a design tool and strategy for sustainable living. In Malawi, a linking of global and local is evident in the majority of permaculture projects which are initiated by foreigners and foreign NGOs. Likewise, 'higher level' permacultural figures, such as course instructors, are predominately foreign although a 'second generation' of permaculturalists has emerged where past students and local practitioners are teaching and developing permaculture projects.

Much has been written about the effects of development within the context of increasing globalisation with suggestions of fragmentation of society, alienation and loss of connection (Wuthnow, 1998; De Haan, 2000; Putman, 2000; Ritzer, 2007). In contrast, other commentators suggest reports of loss of community have been exaggerated and lack empirical substantiation (Ladd, 1999; Wellman, 2001). These critics suggest the impact of globalisation on community is being offset by the rise of subcultures and strengthened or new identities (Webber, 1963; Hall, 2000), with new forms of communities and networks

emerging that, via communication and transportation technology, extend beyond territory and propinquity, and are global, non-hierarchical, loosely connective, voluntary and founded on and shaped by shared interests and beliefs rather than social characteristics (Wuthnow, 1998; Driskell, 2006). Community then, seen as “networks of interpersonal ties that provide sociability, support, information, a sense of belonging and social identity...not limited to neighbourhoods and villages” (Wellman, 2001:228) has strong conceptual ties with social movement networks which serve as ‘phenomenological realities’ engaged in dialectical meaning and identity construction (White, 1992, cited in Passy 2003:27). As such, conceptual similarity is seen between social networks and culture in that both are locations for meaning production and influence values, behaviour and identity (Goodwin & Jasper, 2004b). This has salience with regard to permaculture as a global social movement network which, in a broad sense, is engaged in a localised, non-direct challenge to prevailing culture and norms that are informed by both Malawian culture and globalised capitalist and rationalist notions of individualism. Community and culture, as loci for identity, also have relevance to the research aim of this study, which seeks to explore whether participation in permaculture influences identity and whether this participation influences perceptions of sustainable development.

A common discussion point in social movement network theory is the internet, which is often cited as an example of a rhizome-like structure and as a significant communicative tool and component of infrastructure for social movement networks. The relevance of this in the context of Malawi, where less than 5% of the population have internet access (CIA, 2011), with a reported 12% penetration of telecommunications (IT News Africa, 2008), is typically overlooked as much social network analysis is centred on social movements in developed countries. This theoretical gap concerning social movement communication, transference of information and sharing of values is seen to support the relevance of this research and also opens space for research enquiry regarding dissemination of values and information within the permaculture social movement network in Malawi. This in turn is seen to validate the selection of a qualitative methodology, which is discussed in more detail in Chapter four, in that this enquiry is an exploration of personal perceptions, experiences, behaviour and interactions.

2.5 Summary

This chapter has outlined theories of sustainable development, permaculture and new social movements in order to provide a theoretical basis for the following chapter, which synthesises these theories through an exploration of a key contention underpinning this thesis: that permaculture offers a vision and strategy for sustainable development. A broad overview of social movement theory was given and narrowed to a positioning of permaculture in the more recent field of social movement networks. It is suggested this theoretical focus has relevance given social movement network theory emphasis on the plurality of actor involvement and the multifunctionality of social movement networks with regard to identity, meaning construction and instrumental goals. As such, this relational approach to collective action opens space for a research inquiry into individual behaviour, identity and perceptions of sustainable development within the context of permaculture in Malawi.

Chapter three: Permaculture as a vision and strategy for sustainable development

3.1 Introduction

Chapter three synthesises the three key dimensions of sustainable development: *Society*, *Environment* and *Economy* (see Figures 1 and 2, pp.18-19) with the three ethical tenets of permaculture: *Care for people*, *Care for earth* and *Fair share* in order to provide a theoretical scaffolding for a key contention underpinning this study; that permaculture offers a vision and strategy for sustainable development. To begin, the following section explores the role and relevance of culture within this study. Culture was briefly introduced in Chapter one as part of the justification for research (see pp.4-5), in that this study seeks to fill gaps in cultural inquiry regarding sustainable development, and also in Chapter two with regard to permaculture as a social movement network engaged in challenging unsustainable aspects of culture through personal practice (see pp.26-27). The following section further develops the concept of culture and its relevance to sustainable development and permaculture as the context for the values that underpin human interaction with the environment. From this, discussion turns to the dimensions of sustainable development and ethics of permaculture and how they relate to sustainable development.

3.2 Culture and interconnections

With regard to this thesis, there is a certain synchronicity in the etymology of culture which derives from the Latin *cultura*, originally meaning to cultivate or till the land, and has since evolved to become what Williams (1985) describes as “one of the two or three most complicated words in the English language” meaning, among other things, a way of life and a system of signification through which a society is expressed, reproduced, experienced and developed (cited in Nurse, 2006:35-36). Culture, as a shifting, changing

network of representations and norms, plays a central role in the production and reproduction of society (Schech & Haggis, 2008) and is of especial significance when considering diffusion and acceptance of values and changes in behaviour, which permaculture attempts to do with regard to food production, attitudes toward the environment, people and social justice (Harland, 2007; Ransom, 2007; Bellacasa, 2010)

The role of culture is clearly evident in shifts in development paradigms which have changed over time to reflect changing cultural values. Unlike earlier development approaches, such as modernisation theory that saw local culture as something to be modified or replaced (for example, see Rostow, 1960; Smelser, 1963), culture has become a significant area of focus in contemporary development policy and practice with an increasing appreciation of the interconnectedness of culture with other factors such as society, environment and economy (Plumwood, 2006; Schech & Haggis, 2008). Similarly, to some degree the shift in definitions of sustainable development has also been mirrored in permaculture discourse which has evolved from a sole focus on animals and plants useful to humans to a more holistic and integrated view of culture, society and environment (see Chapter 2:23) (Dodds, 1997; Adams, 2006; Potter, 2008).

These changing definitions of development can be seen as an example of increasing attempts by mainstream development organisations to address ‘metaproblems’ (Roome, 2001), which acknowledge the complexity and interconnectedness of multiple considerations within sustainable development and development in general (Sen, 1990; DESA, 2009; Baumgartner & Korhonen, 2010). This recognition of interconnection is similar to the holistic perspective of permaculture that Holmgren (2004) explains as rooted in systems thinking which conceives of a situation as a whole, rather than a reduction to constituent parts. Fundamental to systems thinking are the ideas of emergence and interrelatedness where synergistic interconnections result in “a whole that is greater than the sum of its parts” (Flood, 2001:133). Kemp and Martens, while not referring specifically to permaculture, endorse a systems thinking approach to sustainable development that combines the capacity to “adapt to change with the capacity to shape change” (2007:8). Similarly, this process-based approach to sustainable agriculture, and sustainable development, is seen to align with Sen’s (1990) suggestion of the need for

pluralist, reflective approaches to development. In this respect culture, as the crucible for values that guide interaction with nature and inform sustainable development policy and practice, must be considered.

Des Jardins suggests individuals within societies are knowingly or otherwise influenced by culturally located values and beliefs which are judged according to a system of culturally located ethics, defined as “the general beliefs, attitudes, or standards that guide customary behaviour” (2006:19). Culture, or the meta-values that inform societal position regarding social justice, inter-generational and intra-generational equity and attitudes toward other species, colours, to some degree, responses to the *what, where, when, how, who* and *why* questions underpinning sustainable development (see Chapter 2:14). In this respect, perceptions of the environment can be seen to be embedded in culture (Plumwood, 2006) and, as such, culture is of significance within this research inquiry into perceptions of sustainable development.

Mische (2003) in turn, links culture to social movements, emphasising the iterative relationship between culture and social movement networks in meaning production and identity construction (Lee, 2007); and it is the relationship between participation in permaculture and perceptions of sustainable development that is at the heart of this study.

The following section first introduces ethics of care as a background for a more detailed description of the three ethical tenets of permaculture, which are juxtaposed with the three spheres of conventional sustainable development theory and policy in order to support the contention that permaculture offers both a vision and strategy for genuine sustainable development.

3.3 Ethics of care

In a permacultural sense, ethics of care¹ draws attention to personal “responsibility in the context of relationship or connection” (Kroeger-Mappes, 1994:110). This, in turn, returns to the idea of holistic interconnectedness which fundamentally orients permaculture as both a design system and as a vision for sustainable development, and has conceptual ties to community and culture as outlined in the previous section.

Mainstream sustainable development is broadly underpinned by deontological ethics, codified in law as rights (Newton, 2003), and more recently within development literature these ethics have been expressed as expansion of freedoms and enhancements of capabilities (Sen, 1990; 1999). In contrast, the ethical position underpinning permacultural ethics of care is that of a moral obligation to care about oneself, others and the environment, and it is a contention of this thesis that these ethics of care position permaculture as a genuinely sustainable strategy for development. While the parameters of sustainable development, and development in general, have *broadened* to acknowledge interconnection and ‘joined up thinking’ (Dickson, 2004), Giri suggests there has been an insufficient *deepening* of development with regard to personal development, motivation and skills (2002:200). In relation to the *what, where, how, when* and *why* questions underpinning sustainable development (see Chapter 2:14), permaculture potentially orientates answers to these questions through personal development expressed as ethics of care. To return to social movement theory, this also fits with Melucci’s (1989) suggestion that at a grassroot level social movements embody the social change they seek which, through individual sustainable self-provisioning of food and often medicine and fibre, permaculture does.

Ethics of care, then, can be seen to open space for personal development through the cultivation of personality and character that embodies and enacts ethical living; and

¹Distinction must be drawn between ethics of care within permaculture and the body of thought traditionally associated with feminist, and more recently eco-feminist, ethics of care theory, wherein ‘caring qualities’, such as compassion and nurturing, are typically associated with women (for example, see Noddings, 1984; Gilligan, 1992). Although there is some conceptual overlap with feminist ethics of care, it is not within the parameters for this study to engage feminist theory regarding ethics of care. As such, when the expression ‘ethics of care’ is used, it is with regard to permacultural ethics of care.

whether this is the case in Malawi is a focus of this study. Expanding on the idea of the need for inclusion of personal development within sustainable development policy and practice (Hay, 2006), it is suggested the currently dominant ideology of human security within current development rhetoric is insufficient in scope and needs to be widened to include that of *psychic* security, seen as cultivation of personal identity and virtues associated with ethics of care such as compassion, a sense of justice, empathy and consideration, to name a few (Gasper & Truong, 2005).

Within permaculture discourse, personal development presents as an area of some discussion. Permaculture uses a zoned design system that demarcates plantings according to levels of activity, with high activity areas closest to the centre of a design in zone 0 and areas needing least attention furthest away in zone 5 (Holmgren, 2003; Morrow, 2006). For many practitioners of permaculture, zone 0 is considered a philosophy for personal development with quasi-spiritual overtones (Mackintosh, 2011). Key figures in permaculture, however, are explicit in their view of zone 0 as strictly spatial and as only a demarcation of the centre of human activity, such as the home. Co-founder of permaculture Bill Mollison is clear: “we can teach philosophy by teaching gardening but we cannot teach gardening by teaching philosophy” (PRIA, 2008).

This difference in perceptions of zone 0 reveals a telling disparity between perceptions of permaculture among practitioners and supports suggestions that participation in social movement network arises from plurality of motivations and identities (Klandermans, 2001; Passy, 2003; Gillan, 2008). In this respect, interpretation of permacultural ethics of care is idiosyncratic, expressed through individual action, belief and identity. This space for idiosyncrasy, however, is not seen to detract from a global perspective of permaculture as a coherent social movement network engaged in challenging unsustainable culture and behaviour through personal action.

The role of individual behaviour, in turn, relates to the temporality embedded in sustainable development, which is seen to be predicated on two time frames. In one sense sustainability is concerned with the permanent viability of ecosystems, far beyond the reach of individual human life span, and possibly beyond collective human existence.

Intergenerational equity is a key area of contention within sustainable development theory and practice and permacultural ethics of care, then, potentially addresses this *how long* question within sustainable development by bringing sustainability to a personal level, encouraging behaviour, expressed through ethical concern for each other and the planet, that is sustainable and, perforce, extends beyond the lifespan of the individual. Permaculture, through *Care for people* and *Fair share*, addresses core issues of intra-generational equity, and through *Care for Earth* inter-generational equity is addressed. Consequently, through these ethics of care and equity, lasting, holistic sustainable development becomes possible.

From this broad overview of permacultural ethics, the following sections narrow focus to an exploration of individual ethics in permaculture which are detailed alongside the three dimensions of mainstream sustainable development.

3.4 Society and Care for people

Society, as an element of mainstream sustainable development theory, policy and practice “is aimed at the development of people and their social organisation, in which the realization of social cohesion, equity, justice and wellbeing plays an important role” (UNESCO, 2009:6). Within mainstream development rhetoric there can be seen, to some extent, a separation of social organisation, equity and justice from economy, which implicitly suggests economy is not a human construct nor a form of social organisation, and equity and wellbeing are solely social issues and unrelated to economy. This separation of economy from society is indicative of the disparity between mainstream development policies which emphasise the need for equality and social justice in sustainable development yet fail to relate these in any practical sense to structural causes of increasing inequality, such as corrupt authority, inequitable international trade agreements, unregulated financial markets and unequal access to resources (McMichael, 2007; Mittal & Moore, 2009; Peet & Hartwick, 2009).

While *Society* is somewhat abstract in scale, the permacultural ‘equivalent’ *Care for people* brings *Society* to a personal level, highlighting personal agency and responsibility. The specificity of *Care for people* leads naturally into related concepts of culture and community and supports Etzioni’s (1988) assertion that “individuals and community are both completely essential, and hence have the same fundamental standing...the individual and community make each other and require each other” (cited in Lumley, 1997:80).

To return to key criticisms of conventional sustainable development rhetoric (see Chapter 2:13-14,19), the nebulous nature of *Society* has meant multiple interpretations and confusion in implementation of mainstream sustainable development programmes, whereas *Care for people* makes clear an explicit ethical agenda and orientation. This, in turn, opens space for personal agency and responsibility for sustainable development at a grassroots level in the context of “a reinscription of the social as a site of ethics and responsibility” (McEwan & Goodman, 2010:103), in which recognition of holistic interconnectedness is purposefully cultivated.

In this regard *Care for people*, in contrast with *Society*, is seen to expand the boundaries of personhood and, rather than a conception of humanity predicated on rationalist individualism, *Care for people* acknowledges the emotional and physical dimensions of people (Attfield, 2003), potentially leading to a deepening of the parameters of society (Giri, 2002). Similarly, a sense of ethical solidarity within permaculture, a global social movement network, may potentially extend the boundaries of society beyond inter-personal to inter-national, that could potentially unify global citizenry with a globalised, shared ethic of care that orientates human interaction with the environment and each other (Clark, 2001:18).

Alongside this conceptual view of society, an ethic of *Care for people* is also very tangible with regard to participation in permaculture. A number of trainers participating in this research spoke of adjusting trainings to address the consequences of persistent disease and malnourishment in Malawi. Alongside education about improving nutrition through increasing crop diversity (Nordin, 2005), information about Action for Natural Medicine (ANAMED), is often included in permaculture trainings and an especial

emphasis is given to plants that have medicinal properties such as anti-malarial and those that help with nausea: a common side effect of antiretroviral drugs.

3.5 Environment and Care for earth

Without negotiating the contested arenas of what is to be sustained, how this should occur, and for how long, which continue to undermine mainstream sustainable development policy and practice (Hay, 2005; Adams, 2006), permaculture offers some response to these central issues of *what, where, when, how, who* and *why* questions within sustainable development. Other than the ecological benefits of organic agriculture outlined earlier (see Chapter 2:22) and a pragmatic recognition of the folly in exceeding environmental carrying capacity, permaculture does not engage in the ethics of environmental protection with regard to what should be accorded moral consideration (see Table 2, pp.15-17); rather, it suggests we should approach the environment with humility and an appreciation of our ignorance. This emphasis on ignorance and caution has strong conceptual links with the ‘precautionary principle’, which is ostensibly a guiding idea in sustainable development theory and literature (for example, see *The World Charter for Nature*, 1982; *The Rio Declaration on Environment and Development*, 1992).

Recently the idea of the precautionary principle has been developed further with the suggestion of a reconceptualizing of current political, economic, scientific and social systems based about *what is unknown*, codified in a ‘virtue of ignorance’ (Vitek, Vitek & Jackson, 2008). Proponents of a virtue of ignorance perspective position 18th century Enlightenment as the starting point for positivist rationalism that is underpinned by accumulating knowledge predicated on the assumption, if not hubris, of human ability to understand and control our environment, as evidenced in the technocratic, anthropocentric ethos of industrialised agriculture and the majority of current approaches to sustainable development (Tellegen & Wolsink, 1998; Vitek *et al.*, 2008). In Africa, technocentrism has extra salience in the context of the increasingly influential *Alliance for a Green Revolution in Africa* (AGRA) which, as the biggest recipient of funding from *The Bill and Melinda Gates Foundation* and headed by former UN Secretary-General Kofi Anan, has

considerable sway in promoting an agenda of increasing crop yields through GM seeds and technology-based agriculture, despite wide vocal and organised grassroots opposition (Mittal & Moore, 2009) and reports highlighting concern regarding the safety and use of GM crops (IAASTD, 2009).

A virtue of ignorance is conceptually similar to a number of permaculture design principles. Principle 1: *Observe and interact* and Principle 9: *Use small and slow solutions*, both reflect permaculture's tacit acknowledgement of the limits to knowledge and the need for caution and context-specific observation before action. Unlike industrialised, monocropping which seeks to create a replicable blueprint irrespective of local ecology, permaculture emphasises the heterogeneity and uniqueness of each site and insists on observation before interaction. Similarly, caution is reflected in a small and slow approach that ideally minimizes damage, should wrong decisions be made. Holmgren couples permaculture Principle 10: *Use and value diversity* with the homily 'don't put all your eggs in one basket' (2004:16), and this also relates to a virtue of ignorance in that it encompasses the idea of diversity as 'insurance' in the advent of unexpected circumstances or poor decision making.

Environment, as a dimension of mainstream sustainable development, is broad and vague and, as such, opens space for contestation in concept and practice (see Table 2, pp.15-17). In contrast, *Care for earth* is located in a 'bottom up' permacultural perspective of sustainable development which promotes localised, context-specific interaction with the environment that is guided by caution, humility and awareness of limits to knowledge.

3.6 Economy and Fair share

The emphasis placed on the causal link between environmental degradation and poverty emerges in the majority of mainstream development publications and increasingly there is growing attention given to the disproportionate and far greater global environmental consequences of resource use in developed countries. In 2006, global agriculture yielded about 2, 786 calories per person, per day, leading Gene Kahn, a prominent organic farmer

and vice-president of sustainable development for General Mills in the US, to draw attention to production, consumption and distribution issues, suggesting “Can organic farming feed the world is indeed a bogus question. The real question is ‘can *we* feed the world?’” (*my emphasis*) (quoted in Halweil, 2006:22). Likewise, inequality emerges as a key area in sustainable development theory and practice, with research suggesting inequality within countries limits the effect of economic growth on reducing poverty and also shifts attention from long term goals to short term distributional issues (DESA, 2009; Wilkinson & Pickett, 2009). Inequality is also strongly linked to environmental degradation, which was highlighted in a study in the Philippines that found research sites with greater equality of income between farmers had significantly higher adoption rates of conservation practices than sites with greater inequality (Lumley, 1997). Similarly, communities with greater economic and material equality enjoy higher social capital and civic engagement, with a two-way causality between social capital and trust that is conceptually related to community, which highlights the interdependence and interconnectedness of people, equity and social justice and the environment (Baland, Bardhan & Bowles, 2007; IAASTD, 2009; World Bank, 2009).

This interconnection returns to the idea of underlying structural causes of poverty, food insecurity and environmental degradation and the inadequacy of government policy in addressing them which, permaculture as a system for self-provisioning of food, to some degree circumvents. This also returns to the role of values: in particular, consumerist and materialist values that accompany neoliberal capitalism, which permaculture challenges with an ethic of fairness that, although subjective in the concept of ‘fairness’, serves to remind economy is a social construct and expression of ideology. *Fair share* also emphasises personal responsibility for intra-generational equity and the word ‘fair’ is connotative of the qualitative concept of *equity* rather than *equality*, and allows for individual judgement and action relative to context.

This in turn is seen to relate to the ‘paradox’ of sustainable development which suggests conflict between the terms ‘sustainable’ and ‘development’ (see Chapter 2:13). In response to this, Herman Daly, a key proponent in the emerging field of sustainable economics, draws distinction between *growth* which is connotative of an increase in size,

and *development* which is connotative of improvement or change. Daly's (1996) view of sustainable economic development is "development without growth" (cited in DesJardin, 2006:87) where, alongside conventional economic issues of allocation and distribution of resources, consideration is also given to resource flow, which includes inputs, outputs and waste and is determined by the regenerative capacity of natural resources. This view of resource flow is a position that permaculture explicitly endorses and promotes through Principle 5: *Produce no waste* and Principle 6: *Use and value renewable resources and services* and these principles further underline the differences between a permacultural conception of *Economy* with that of mainstream sustainable development theory.

3.7 Summary

This chapter discussed the concept of culture, which was positioned as the broader context for the meta-values that inform sustainable development theory and practice. It was suggested permaculture as a social movement network has a potential role in meaning attribution with regard to cultural production and values (Mische, 2003; Lee, 2007). In this respect permaculture is seen as engaged in effort to challenge current culture through embodied morality (Bellacasa, 2010), expressed through the practice of ethically-informed, landscape design and sustainable agriculture. Following this, a broad overview of ethics of care was given with the accompanying contention that an ethical orientation is needed to effect genuine sustainable development. This chapter then brought together the key elements of conventional sustainable development with the ethical tenets of permaculture in order to explore and contrast each paradigm. While conventional sustainable development and permaculture share similar spheres of focus and activity, it was suggested mainstream sustainable development is conceived from an abstract, objective and rational perspective (Martin & Mighall, 2000; Newton, 2003) and remains open to interpretation in both theory and practice (Redclift, 2005). In contrast, permaculture offers an ecocentric, place-based, perspective of human interaction with each other and with the environment (Casas Cortés *et al.*, 2008) and, through ethics of care and equity, has potential to foster genuine sustainable development.

Chapter four: Methodology

4.1 Introduction

This research is engaged in effort to detail a ‘thick’ understanding of sustainable development as perceived by people in Malawi practicing permaculture and as such, is qualitative in epistemological position, design and implementation. This chapter begins with a brief overview of qualitative research theory then details and justifies the methodology selected, which can be broadly described as an ethnographic case study. Selection of research sites is then explained followed by a justification of research tools used: primarily semi-structured interviews and in-field observation with secondary sources of data from research site documents and permaculture literature analysis. As is increasingly common in qualitative, ethnographic research I also declare my personal philosophical position in order to air potential bias and subjectivity. Following from this, a brief overview is given of ethical issues encountered within the process of my research.

4.2 Qualitative research

Bryman and Burgess (1999) suggest qualitative research has three commitments which, in turn, are seen to validate my choice of qualitative methodology:

- i. understanding and interpretation is sought through interaction and empathy with actor's actions and perceptions
- ii. data is typically collected in natural settings
- iii. qualitative methods are generally inductive and theory tends to be generated rather than tested (cited in Brockington & Sullivan, 2003:57).

With the above criteria in mind, I chose a qualitative rather than quantitative research methodology because my research aim is concerned with how sustainable development is understood in the context of permaculture in Malawi, and explores whether permaculture

contributes to research participant perceptions of sustainable development. My research is, in essence, “interested in how people interpret experience, construct worlds and what meaning they attribute to their experiences” (Merriam, 2009:5).

As qualitative research my methodology is informed by an interpretative epistemology which contends there is no single truth but multiple realities that are context-bound, subjective, social constructs (Creswell, 2007; Merriam, 2009). As such, my research is an idiographic (individual and subjective) study of ‘knowledge-practices’, seen as the embedded, contextualised and localised practices and thought in individuals that produce knowledge: as meaning, identity, technique and ways of understanding the world (Santos, 2004 ; Yates, 2004; Casas-Cortés *et al.*, 2008). To relate this concept of knowledge-practices to my research, context is seen as participation in permaculture in Malawi, practice is the literal activity of permaculture, and thought refers to perceptions of permaculture, sustainable development and reasons for participation. As such, my research is concerned with revealing and exploring the knowledge produced by knowledge-practices in order to determine what influence, if any, involvement in permaculture has in shaping meaning, identity, behaviour and ways of understanding the world.

As my research and data analysis is an effort to generate theory regarding participation in permaculture in Malawi and perceptions of sustainable development, I felt this justified the choice of a qualitative research methodology, which favours depth rather than breadth in terms of data. From this broad theoretical positioning regarding qualitative research, the next section narrows my methodological focus and explains the rationale for my selection of an ethnographic case study. This is followed by a description of research tools I employed.

4.3 An ethnographic case study

My study responds to Goodwin and Jasper’s (2004a) call for an approach to social movement analysis that eschews invariant models and theories as explanations for

collective behaviour and instead seeks to explore the ‘greyer’ waters of the role of social movements apropos meaning-making, emotion, value, identity and culture.

With regard to how meaning is produced and perceived, Denscombe (2003) suggests case studies and ethnography tend to be holistic rather than focusing on single variables and can offer indepth and nuanced insight into relationships, processes, culture and identity in a natural setting, using a number of complementary research tools. Merriam adds to this suggesting “explanation and holistic description are hallmarks of case study research” (2009:43) and case studies are both *particularist*: focused on a certain event, situation, characteristic or phenomenon which, with regard to my research, is permaculture in Malawi, and *descriptive*: where the end result is a deep and detailed description, such as perceptions of permaculture and sustainable development. Yin (2009) further suggests case studies are particularly suitable for *how* and *why* questions, which shape my research aim and three key research questions, and these considerations are seen to validate my selection of a case study approach to research.

In Chapter three, permaculture was positioned as a social movement network and, as such, a potential crucible for emergent culture and this positioning underpins the rationale for ethnography in my research. Wolcott's suggestion that for something to be ethnographic “it must provide the kind of account of human social activity out of which cultural patterning can be discerned” (1999:68) addresses a cornerstone of my research aim: whether participation in permaculture is an expression of an emergent (sustainable) culture that can be discerned in the values and attitudes which inform perceptions of sustainable development.

Similarly, given the multi-sectorial nature of sustainable development and the multifunctionality of agriculture, I felt an ethnographic case study was an appropriate epistemological position and methodology (Denscombe, 2003; Watson, Alroe & Kristensen, 2006; Schrank, 2008) for my holistic exploration of sustainable development and my effort, expressed in Malinowski's (1992) charmingly anachronistic words: “to grasp the native's point of view, his relation to life, to realise his vision of his world” (cited in Denscombe, 2003:85).

4.3.1 Case study boundaries

Case study boundaries often present as an area of theoretical contention with some scholars suggesting confusion about the boundaries of a case study and whether a case study is a *unit of study*, a *process* or an *end product of study* (Wolcott, 1999; Merriam, 2009; Yin, 2009). I contend my research is all of the above: a *unit of study*, where three research sites were studied; a *process*, where the qualitative nature of my research determined methodology and what was suitable for case study research; and an *end product*, where, in a broader sense, my research conclusions can be seen as a case study of people in Malawi involved in permaculture.

4.3.2 Generalisability and representation

A common criticism of case studies is the tendency to produce ‘stand alone’ descriptions and understandings of situations which may or may not be generalisable and applicable to other contexts (Denscombe, 2003). Similarly, Blee and Taylor suggest while semi-structured interviews are useful as a tool for gaining insight and depth into people's ideas and thoughts, this reduces the “ability to make systematic comparisons between interview responses” (2002:93).

An immediate response to this criticism lies in the nature of qualitative research itself, where, as mentioned, the emphasis is on depth rather than breadth (Yin, 2009) and makes the desire and need to generalise unnecessary, if not redundant. It is also my belief that place-based analysis is a strength rather than weakness in that my research seeks to explore other ways of knowing and subjectivities where in the context of a theoretical positioning as a social movement network, plurality and heterogeneity are celebrated as a counter to grand narratives of development (Escobar, 2003) and, in the context of a social movement network that aims to design an ecological system to sustainably self-provision, is literally grounded in the local.

In a similar line of thought, Santos (2004) suggests generalisability and transferability are criteria typically associated with western scientific paradigms and accompanying ‘monocultures of knowledge’; an observation which has ironic saliency given the permaculturalist challenge to monocrops and the need for localised knowledge necessary for successful food production.

4.4 Researcher subjectivity

My approach to this study is located in an interpretivist, critical development belief that nothing is objective or value-free and there is no single truth but rather subjective, often competing, understandings and ways of knowing. Claims of neutrality and objectivity, typically found in science, economics and quantitative research methods, are undermined by the expression of values inherent in ‘problem’ identification and selection, normative and theoretical assumptions employed, and methodology design and implementation (Watson *et al.*, 2006). The role of researcher subjectivity in ethnography is well-recognised with regard to the subjectivity imbued in framing research questions, choice of methodology and analysis and interpretation of research data. Researcher background, culture, gender, age and a raft of other considerations all factor into this subjectivity (Denscombe, 2003; Yates, 2004; Marshall & Rossman, 2011) and as such it is increasingly common within qualitative research for researchers to declare personal values in an effort to be reflexive and cognisant of the influence of subjectivities.

With this need for reflexivity in mind, I maintained a field journal which served as a tool for recording research responses as well as my observations of both participants and myself. In Chapter six, which details my research findings, I have recorded my feelings and thoughts alongside my observations and comments from participants in order to allow the reader added insight and opportunity to draw their own conclusions regarding subjectivities that influence my analysis. Similarly, the following subsection details my positionality to enable the reader to add to their own understanding of my research.

4.4.1 My personal position

Mauch and Park (2003) suggest a Master's thesis should be a written account of an intellectual adventure and to this was added my fervent hope my thesis would also offer a physical adventure in a continent I had never visited before. Hence, Africa was the immediate focus of my search for research opportunity and from this Malawi was selected because of widespread permaculture practice.

I have a long-held interest and belief in permaculture. Both for myself and in preparation for fieldwork I completed a Permaculture Design Course and in a small way I practice permaculture principles at home. My limited success in vegetable-raising and attempts to provide a summers-worth of mojito mint however, have been frustrating, humbling and increased my respect for those who are able to grow plants. This in part explains my decision to focus on permaculture; I wished to gain hands on experience in how to grow food in a sustainable way. As such I entered the field with a double agenda and role: as both a researcher and student.

My chief concern prior to entering the field regarding potential bias was a fear I would only see permaculture positively and successfully, rather than realistically. With this in mind I invited research participants to specifically discuss problems and challenges involved in permaculture and used a field journal as a vehicle for self-reflection to hopefully help air any bias in my perceptions.

4.5 Methodological tools

Emirbayer (1997) proposes a relational approach to social network analysis that views actors as embedded in a network of shifting, dynamic and processual relationships. Because this study is an exploration of meaning and values within the context of a social movement network, I felt multiple research methods would allow for slightly different perspectives on the same topic, ideally meaning richer, more nuanced insight as well as aiding data credibility through triangulation (Klandermans & Staggenborg, 2002). Open-

ended, semi-structured interviews, in-infield observation and permaculture document and literature analysis were my chief tools for data collection and these are discussed more fully in the following subsections. Secondary data, such as socio-economic statistical information found in government and NGO publications, was used in order to get a 'feel' for cultural mores and frames of reference (Yates, 2004) as well as provide background information with regard to the context of permaculture in Malawi.

I chose to avoid questionnaires or surveys as a method for data collection because of their tendency toward reductionism, rigidity and sacrificing depth in favour of breadth (Denscombe, 2003) and this, I felt, was not appropriate to the qualitative nature of my research. Also, I did not want literacy to be an issue. About 70% of the population over 15 in Malawi are literate but for women, literacy drops to 60% and this is much lower in rural areas (WHO, 2011:1). This was a concern prior to entering the field given my research was primarily undertaken in rural areas, and also given the predominant role of women in household food production. This concern, as I discovered, was well-founded with all of the farmers in the most rural of my research sites illiterate and a significant number of farmers and villagers in my other two research sites also illiterate.

Although focus groups are an often used tool in qualitative research I chose not to use focus groups for two reasons. The first reason was pragmatic as organising a focus group would have been difficult because of time, distance and lack of communicative tools. At one research site I spent three days visiting nine farmers and one trainer, travelling considerable distances on foot for want of alternative transport. The majority of research participants did not have telephones and all were busy with their farms or families. As such, organising a focus group would have been a logistical challenge as well as, I felt, an undue imposition on the time of research participants. With regard to trainers, distance was also an issue with typically only one or two trainers available at each research site, which in turn were in different parts of the country.

Pragmatic concerns notwithstanding, my chief issue with focus groups, however, is the potential role of power dynamics within a focus group. At the time I started interviewing I had been in Malawi about a month, spoke (and still speak) negligible Chichewan and I

felt I simply did not have the cultural insight nor skills, such as language, to detect and accommodate any influential power dynamics, such as the influence of gender, wealth or age. This concern is supported by Brockington and Sullivan (2003) who suggest focus groups are best undertaken when actors are sufficiently well-known to the researcher, and this was a significant consideration in deciding not to have focus groups.

4.5.1 Open-ended, semi-structured interviews

Open-ended, semi-structured interviews were my main tool of research inquiry because they are particularly well-suited to exploration of meanings, values and perceptions, allowing for greater flexibility in response (Mauch & Park, 2003) and, ideally, a deeper, more personal expression of the role of permaculture with regard to sustainable development. I also felt semi-structured interviews were most appropriate for interacting and building empathy with research participants. All of my data was collected in a 'natural setting': on a farm, in an organisation office or at a research participant's home, and I used a purposive snowball sampling technique where research participants introduced to me to people they thought relevant to my research. This, along with semi-structured interviews, offered opportunity for accessing the perspectives of a broader and more diverse range of participants from different backgrounds and positions (Blee & Taylor, 2002).

Qualitative methods are typically inductive, rather than deductive, in that theory arises from research (Brockington & Sullivan, 2003) and I hoped individual semi-structured interviews would generate not only information for analysis but also themes and categories, opening space for an exploration of the unexpected (Yin, 2009). Through open-ended, semi-structured interviews, themes that emerged during interviews were explored, clarified and discussed, both at the time and later within a theoretical context. For many of my interviews I returned and asked follow-up questions where, following transcription and reflection, I was unclear about meaning or details. Similarly, as opposed to isolated sentences from more structured interviews, surveys or questionnaires, open-

ended, semi-structured interviews allowed for exploration of responses both within the context of conversation and also as related to permaculture discourse.

Blee and Taylor suggest semi-structured interviews also allow a 'longitudinal window' on social movement activity (2002:107) that may offer insight into the lifecycle of a movement with regard to participation and shifting focus on activity and issues and this had particular relevance to my research in that two of my research sites are considerably less active when compared to past activity, while the third site is expanding in spheres of activity. Issues surrounding these different rates of activity were explored in the course of my interviews and are discussed accordingly in Chapter six, as part of my findings and in Chapter seven, as part of my conclusions.

4.5.2 Observation

Lichterman distinguishes between two modes of observation: *field-driven observation*, which seeks to describe participant activity, interactions, thoughts and feelings in the field, and *theory-driven observation*, which seeks to relate participant activity to a predetermined theory and is typically macro in scale (2002:122-123). I opted for the former method of observation as, while I entered the field with knowledge of an array of theories regarding social movements and sustainable development, I did not wish to frame my observations to fit these theories. Rather, in line with my ethnographic, inductive position and approach, I strove to record my observations as field notes without a predetermined agenda although I was aware that my observations could potentially augment or challenge concepts that emerged in interviews and later analysis (Marshall & Rossman, 2011).

I was fortunate enough to be in Malawi for about 3 months and while I investigated how permaculture influences perceptions of sustainable development, personal identity and values, I also extended the same investigation to myself in the interests of revealing researcher subjectivities (Yates, 2004). I had never been to Africa and this was also the first time I had witnessed development in 'real life'. It was, as I suspect is often the case, not at all what I expected. As such, my field diary details what is much like a roller

coaster of emotion including despair, anger and sadness at what I often perceived as the futility and failure of development, but also excitement and hope from the inspirational and admirable people I met. Where relevant my observations of myself and diary entries are reproduced in order to allow the reader add to their interpretation of my discussion of results.

4.5.3 Document analysis

As discussed in Chapter three, one of the distinguishing features of permaculture that locates it as a social movement network, is an explicit set of design principles and ethics which, despite the wide number of books by different authors (for example, see Mollison & Holmgren, 1978; Holmgren, 2003; Morrow, 2006) remains, in essence, unchanged. The Permaculture Design Course: the internationally standardised two week course, is based around these principles and ethics and an assumption underpinning my social movement literature analysis is that the principles and ethics of permaculture are representative of movement discourse. Given the standardisation of the Permaculture Design Course taught and how the principles and ethics are essentially unchanged in the several books used during my literature review, I felt this was a reasonable assumption. In this respect, permaculture principles and ethics are seen to inform a meso-level social movement discourse that acts as a framework for a micro-level exploration of individual perceptions of sustainable development.

4.6 Selection of research sites

Prior to arriving in Malawi I had been in correspondence with a permaculturalist living there and had arranged tenure as a volunteer with his organisation. My original plan had been to focus solely on his organisation as my research site. Upon arrival, however, it quickly became evident there had been considerable miscommunication and his organisation was not suitable for my research purposes. Fortunately the director of this

organisation proved to be a most kind and helpful man and I am indebted to him for facilitating access to other permaculture initiatives and practitioners in Malawi.

Using a purposive snowball sampling technique, wherein he and other interview participants suggested potential research participants, I was introduced to a number of permaculturalists and, following three weeks of orientating myself and meeting a lot of people in informal situations, three research sites were selected: two Thyolo district schools which had participated in the government-sponsored Sustainable Food and Nutrition Programme (code SF), *Never Ending Food* Permaculture Village (code PV) and *Maziko Amoyo Wabwino Organisation* (MAWO) (code MA). These three research sites are described in greater detail in the following chapter.

Research participants were either farmers (code fa); course trainers (code tr) which included founders of research sites and permaculture course trainers; local trainers (code lt), who were local people selected to train other local people as part of the SFN programme; or villagers living in the permaculture village (code vi).

Alongside people from my research sites, I was also introduced to a number of permaculturalists who were not included in my research but were also practicing, demonstrating or teaching permaculture in Malawi. While these people are not included in figures displaying data from my interviews, I considered them key informants and included their responses in my analysis and conclusions, both in the interests of adding ‘richness’ to my data analysis and as a means of corroborating findings.

Table 3 below, outlines the total number of research participants according to initiative and role within the initiative.

Table 3: Research participants according to role and permaculture initiative

	MAWO Code: MA	<i>Never Ending Food Permaculture Village</i> Code: PV	Sustainable Food and Nutrition Programme Code: (SF)	Total
Farmer Code: fa	MAfa1 MAfa2 MAfa3 MAfa4 MAfa5 MAfa6 MAfa7 MAfa8 MAfa9		SFfa1 SFfa2 SFfa3 SFfa4	13
Villager Code: Vi		PVvi1 PVvi2 PVvi3 PVvi4 PVvi5 PVvi6 PVvi7 fa 1 PVvi8 fa2 PVvi9 fa3 PVvi10 fa4		10
Trainer Code: tr	MAtr1	PVtr1 PVtr2	SFtr1 SFtr2 SFtr3	6
Local trainer Code: lt			SFlt1 SFlt2 SFlt3	3
Total	MAfa 9 MAtr 1 Total 10	PVvi 10 PVtr 2 Total 12	SFfa 4 SFtr 4 SFlt 3 Total 11	Farmers 13 Villagers 10 Trainers 7 Local trainers 3 Total 33

Source: Author

4.7 Ethical considerations

Prior to field work my research was deemed low risk following an in-house peer review. As part of the risk assessment process I discussed potential ethical issues involved in my research with Massey University Development Studies staff and my thesis supervisors, and during field work I was conscious to observe the *Massey University Human Ethics*

Committee Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants. A project information sheet and consent form were translated into Chichewan and given, along with an English version, to research participants. Prior to interviews and throughout my research I was careful to continually stress participation was entirely voluntary and consent could be revoked at any time without need for explanation. Unfortunate oversight meant permission to take photos was not part of my research participant consent form so oral permission was sought and given where photos were taken. After interviews were transcribed and participants were assigned a code I separated the code key from the transcriptions in the interests of research confidentiality and security. About half of my research participants were either illiterate or reluctant to sign a form and in all of these cases oral permission was sought and received.

4.7.1 Research, power and knowledge

In line with critical development thought I was very sensitive to power differentials between myself and research participants. Although all research participants gave permission to record, for the greater part I did not use my digital recorder, particularly when interviewing. Along with the recorder I also had my camera and I felt with both pieces of equipment I was drawing undue attention to the disparity in wealth and opportunity between myself and my research participants. Whether or not this was the case is unclear, however my discomfort, if not guilt, concerning my comparative privilege was a significant consideration in my decision to take notes rather than record. As it happened the camera was a great way to build rapport with participants who enjoyed seeing themselves on the screen and I also found I could express my gratitude for their time and participation in my research by taking a photo or two and having it developed for them.

My reticence to use my digital recorder and my decision to take notes was also part of a broader discomfort with the actual act of research. By nature I am a little shy and perhaps because I am an extramural student and removed from university culture, I felt almost fraudulent in my claim to be undertaking research and felt I was neither qualified nor

prepared for research. Note-taking helped me feel like a ‘proper researcher’ while also giving me something to do other than nervously fiddle or unnecessarily apologise, as is my want when feeling socially awkward. While I was aware how my note-taking might have created a barrier or intimidated participants, particularly those who were illiterate, I feel this was offset by my apparent bemusement about my role as researcher and I think this may have advantageous, my own discomfort notwithstanding, with regard to power dynamics. It is my belief, despite differences in wealth, education and opportunity, the majority of participants were neither intimidated nor threatened by me, nor did I seem, in any way, an expert or authoritative figure. I will go further and say I believe I was actually the object of considerable pity as there were a number of times when my age, 36; marital status, single; and lack of children and close family, came up in conversation and research participants changed the subject in what I strongly suspect was effort to kindly save me embarrassment.

I also feel the role of researcher as a figure of authority or expert was diffused through my attitude toward permaculture. I was somewhat self-serving in my choice to focus on permaculture in that I hoped to improve my own knowledge and experience in permaculture design. As such, I took every opportunity to learn as much as I could from farmers and PC villagers about their permaculture practice, and a considerable amount of my time with research participants was spent discussing their efforts and methods in water harvesting, pest control, favourite kinds of compost and such. While having participants ‘teach’ me was not deliberately undertaken as part of some post-development machination to invert the researcher/researchee power and knowledge dynamic, I do believe it had the fortunate unintended effect of allaying some of my concerns about power and knowledge.

A problematic area regarding ethics and power related to the occasions I used people within an initiative to translate for me. I was very aware of the school of thought surrounding the themes of research as a tool for oppression or as a means to furthering researcher personal agenda with scant regard to participant interests (Dowling, 2000). Using people within a site as my translator could have skewed interview responses, with participants fearful of criticising an initiative or saying what they thought the translator

wanted to hear. Similarly, because I do not speak Chichewan, potentially translators were able to modify responses to either what they thought I wanted to hear, or what they wanted to hear. Unfortunately, because of the distances involved between research sites and, in the case of MAWO, the isolation of the research site, in many instances bringing an independent translator was impossible. The best I could do to address this potential problem, I felt, was to make clear to translators there were no right or wrong ‘answers’ in interviews and to be alert and sensitive to body language of research participants in interviews. I feel my concerns were allayed in the content of my research responses, in that research participants were clearly comfortable criticising aspects of an initiative or saying they did not know or did not understand. I also felt the topic of my inquiry, permaculture and sustainable development, was unlikely to be sensitive or topical with potential repercussions from authority, and as such, there was little incentive for translators to alter research responses.

From this subsection, which is reflexive in an effort to acknowledge my positionality regarding myself as a researcher and my concern with power differentials, discussion now turns to a brief overview of data analysis within my research.

4.8 Data analysis

Data analysis is “the process of meaning making; consolidating, reducing and interpreting what people have said and what the researcher has seen and read” (Merriam, 2001, cited in Kanuka, 2010:104), and it is the researcher’s role to analyse data, which is coded and condensed, in order to ascertain reoccurring patterns and themes and from this explain, induce theory, and make conclusions (Creswell, 2007).

As part of my research process, interviews alongside my observations and thoughts were transcribed as soon as possible, although at one research site lack of access to electricity meant a delay of a few days in transcription to computer. As outlined earlier researcher critical reflexivity (Brockington & Sullivan, 2003) is a hallmark of ‘good’ research and is particularly important within ethnography, so my field diary, which included my

observations and thoughts, alongside transcribed participant comments, was integral to my data analysis as part of my efforts to establish credibility and “detect researcher bias or inconsistent conclusions” (Kanuka, 2010:104). Following transcription, I grouped data into categories, defined by similarity and agreement in data, and looked for themes and patterns upon which to base analysis and conclusions.

In effort to avoid a universal, authoritative voice, the language I have chosen to use to discuss my research findings and conclusions is not absolute or abstract. I have deliberately used the first person pronoun and modal verbs and modifiers such as ‘might’, ‘could’ and ‘possibly’, in order to emphasise that my analysis and conclusions are solely my opinion and as such the reader is invited to agree with, challenge or augment with their own interpretations of my research.

4.9 Summary

This chapter has outlined and justified selected methodology beginning with an overview of qualitative research methodology and narrowing focus to justify my ethnographic case study and selection of research tools: open-ended semi-structured interviews, in-field observation and document and literature analysis. Selection of research sites was explained alongside an outline of research participants according to site and role. In line with an ethnographic case study approach, I declared my personal position and any potential bias as part of my effort to remain as reflexive and transparent as possible and allow reader insight into my subjectivities and research concerns. Potential ethical issues and issues relating to power were discussed and a brief overview of data analysis was given.

Chapter five: Context for Fieldwork

5.1 Introduction

This chapter details the context of my fieldwork beginning with a demographic and socio-economic overview of Malawi alongside a brief discussion of government sustainable development and agricultural policy. This is followed by an exploration of permaculture in Malawi and a detailed description of the three sites used in my research.

5.2 A snapshot of Malawi

The Republic of Malawi is a small land-locked country in South East Africa nearly 120 000 km² in size, bordered by Tanzania, Mozambique and Zambia. It is a geographically diverse country of mountains, high plateau grasslands, tropical rainforests, savannahs, scrub and a variety of woodlands, with Lake Malawi accounting for 20% of its surface area. Malawi has three distinct seasons: dry and hot from August to November, wet and hot from December to April and cool and drizzly from May to August. There is sufficient rainfall for dry-land farming with tropical and sub-tropical crops such as maize, which accounts for 80% of cultivated land, tea, tobacco, the main export crop, cassava, peanuts, cotton and various fruits and vegetables (UNDP, Malawi 2005:4-5; NSO, 2007:1-2).

Malawi is divided into three administrative regions: Central, Northern and Southern, and these are comprised of 26 districts, with four major urban centres: Lilongwe, the capital; Blantyre, the commercial centre; Zomba, which hosts the main campus of the University of Malawi; and Mzuzu, which serves as the administrative centre for the Northern region.

Figure 3: A map of Malawi



Source: The CIA, 2011

(Note: red numbers denote research sites: 1= the PC village, 2=Thyolo schools in the SFN programme, 3=MAWO)

The national language is Chichewa although the official working language is English with other local languages such as Yao and Tumbuka spoken according to region. Seventy-five percent of the population is Christian and the remaining people are a mix of Muslim, Hindu and local religions including animism and ancestral worship (UNDP, 2005:6).

In 1964 Malawi became independent of British rule and in 1994, after three decades of one-party rule, multi-party democratic elections were held. In 2009 current President and Head of State, Bingu wa Mutharika, leader of the Democratic Progressive Party, began his second term (UNDP Malawi, 2005; EAD, 2006; WFP, 2010a). Despite an ostensible anti-corruption election campaign, however, increasingly donors are withholding funding until evidence is provided of improved accountability and democratic reform (AFROL, 2011).

In 2010 Malawi had a population of 15 million with 45% of the population under 15 years old and an average life expectancy of about 50 years (CIA, 2011). About two thirds of Malawians live on less than US\$1.25 per day (World Bank, 2011:1) and most households are unable to meet food requirements without assistance, with female-headed households and those reliant on agricultural wages the most vulnerable (UNDP, 2005:8). Energy is also a central issue in Malawi, as less than 4% of the population have access to the main grid, which is hydropowered and is currently estimated too small to meet projected load growth (UNDP Malawi, 2005:9; CIA, 2011).

About 75% of people live in rural areas as small-holders and subsistence farmers with 40% of Malawians with no land or land less than one acre (WFP, 2010a:xiii). Agriculture accounts for one third of GDP, 90% of export earnings and three quarters of employment, of which women account for two thirds of full-time farm employment (UNDP Malawi, 2005:8).

5.3 Government policy

Sustainability is a theme and adjective in virtually all Malawian government sector policies and publications, with sustainable growth and development being the primary goal of the Malawi Growth and Development Strategy (MDGS), the overarching national framework for development.

Similarly, poverty eradication and food security is an ongoing concern and features in the majority of government social and economic policies (Cammack, *et al.*, 2003; Ford, 2010). With an estimated 12% of the population HIV positive (World Bank, 2011:1), AIDS prevention and treatment is also a prominent focus in development initiatives in Malawi and there is much emphasis on the causal links between poverty, hunger, disease, economic productivity and environmental degradation. Specifically: loss of income, ability to work, increased financial and emotional burden on households as a result of HIV, malnutrition and other diseases, limited education, land access, poor governance, access to credit, limited opportunity for non-agricultural wages and vulnerability of

monocrops to weather and pests, are all pinpointed as both causes and consequences of poverty and food insecurity (Cammack *et al.*, 2003; WFP, 2010a). In a broader context increasingly adverse impacts of global climatic change such as droughts and flooding, and fluctuating market prices for inputs such as seeds and fertilisers and exports such as tobacco, which accounts for over half of export earnings (Persaud & Meade, 2009), are also identified as significant issues related to poverty and food insecurity (Cammack *et al.*, 2003; Bwalya *et al.*, 2004; UN Malawi, 2009; WFP, 2010a).

5.3.1 Agricultural policy

Since the 1960s, under the direction of former president Hastings Kamuzu Banda, agriculture in Malawi has been heavily focused on increasing food production and food security through agricultural policies that support industrialised agriculture, primarily based about maize and tobacco, for sale in markets. In spite of these policies, however, food insecurity persists as a concern in Malawi, with food shortages in 2001/2 and 2005/6 in Malawi that were attributed to poor weather conditions, mismanagement of grain reserves and increasing costs of inputs (Chirwa *et al.*, 2008; Harrigan, 2003).

In response, in 2006 the government reintroduced an Agriculture Input Subsidy (AIS) Programme which has resulted in surplus maize since 2007 (Matenje, 2009; WFP 2010a:xi; Reuters Africa, 2011). The programme, however, is not without critics. The majority of subsidised fertiliser is used on maize, generating debate regarding the earning potential of this crop in the context of market price fluctuations, the nutritional content as maize is typically processed with considerable nutrient loss, the risk of reliance on a single crop that is not native to Africa and is susceptible to disease, and associated concerns regarding impacts of monocropping on biodiversity and soil health (WFP, 2010a; Dorward & Chirwa, 2011). Maize requires significantly more water and pest control than indigenous varieties of millet, sorghum and amaranth and unlike these local crops which can be harvested throughout the year maize is typically harvested once a year, leading to a glut in food with following 'hungry months' (Swidler & Cotts Watkins, 2009).

Increasingly, there is recognition of the failure of agricultural subsidy programmes to significantly address rural poverty with wealthier farmers typically benefiting the most from subsidies, and this has raised the suggestion the benefits of subsidies are short-term and AIS programme funding may be better spent improving infrastructure and developing non-agricultural sectors of the economy (Sabola, 2011). The efficacy of applying chemical fertilisers is also challenged with research in Kenya suggesting highly degraded soil, as is much of the land in Malawi, needs rehabilitation before fertilisers will increase yield (Buffie & Atolia, 2009; Marenja & Barrett, 2009).

The AIS programme also signals a shift toward large-scale industrialised farming and a culture of neoliberal economic policy and market reform, which saw the sale of National Seed Company of Malawi (NSCM) to the multinational corporation Cargill in the 1980s (who later sold it Monsanto in 1996) as part of World Bank and IMF imposed structural adjustment (Bezner-Kerr, 2010:103). Since the sale of the NSCM there has been a rise of seed companies in Malawi from 3 to 10 with certified seed adoption rates increasing from 10% to 45% (Mzale, 2011) meaning a significant inclusion into the market economy of what had previously been a free commodity, alongside a need for costly inputs such as fertiliser and pest control. This has significant ramifications for small hold farmers, who government policy expects to exit agriculture and find waged work in a waged labour market that is virtually non-existent (Li, 2009). A 2009 study of several sub-Saharan African countries revealed among rural Malawians economic insecurity was the issue of greatest concern, more so than AIDS (Swidler & Cotts Watkins, 2009), and this suggests employment opportunity is widely perceived as limited.

Aid dependency is another criticism levelled not only at the AIS programme but other programmes such as the School Feeding Programme which was implemented in 1999 in an effort to improve health and reduce absenteeism with the provision of a daily meal to primary school-aged children (Save the Children, 2008; WFP, 2010b). As the name suggests, food is given to schools, rather than self-provisioned and a 2003 survey found 92% of participant schools would be unable to sustain the programme were support withdrawn (Nordin, Njikhoo & Walker, 2008:3).

It is in this context of persistent poverty, industrialised monocropping, food insecurity and aid dependency that many permaculture initiatives have been established in Malawi, and this is discussed in the following section.

5.4 Permaculture in Malawi

Within Africa, Malawi has among the highest number of permaculture projects in Africa which include state sponsored, NGO driven, church-affiliated and private initiatives. As one research participant expressed “there is a magic about the wisdom of permaculture that just seems to hook into people, it just so obviously makes sense, it works and the whole process genuinely creates an outcome that is greater than the individual component’s magic” (SFtr2).



Plate 1: *Nature's Gift Permaculture Centre, Lilongwe, Malawi.*

Source: Author

One of my research sites included a school district involved in the national Sustainable Food and Nutrition (SFN) pilot programme that sought to teach permaculture in 40

selected primary schools throughout Malawi. Alongside this government supported programme, there are also a number of private and NGO-affiliated organisations including community projects, guest houses and individual initiatives that all offer demonstration and training in permaculture design principles, with a growing number of small holder farmers currently practicing permaculture. Several schools in Malawi are also a part of The Regional Schools and Colleges Permaculture Programme (ReScope), an initiative began in Zimbabwe that promotes permaculture in schools in southern and eastern Africa (Nyika, 2011). In 2009 Malawi hosted *The 9th International Permaculture Conference and Convergence* in the capital, Lilongwe, and this hastened the opening of *Nature's Gift Permaculture Training Centre* (see Plate 1) which offers workshops and training, as well as selling produce to local businesses and hosting student interns. A model permaculture village, where a condition of residence is practicing permaculture, has also been established about 45km from the Lilongwe as part of a family-operated permaculture organisation *Never Ending Food*, and is also one of my selected research sites and, as such, is detailed more fully in the following section.

While exact figures are difficult to pinpoint it is conservatively estimated that permaculture practitioners in Malawi, excluding children and teachers in the school programme, number in the high hundreds, if not higher, and are likely to increase with a proposed project still being negotiated that is expected to train hundreds more Malawian farmers in permaculture design principles and techniques (SFtr2, PVtr1).

From this section's broad introduction to permaculture in Malawi the following section narrows focus to introduce my selected research sites.

5.5 Research sites

Three research sites were selected as part of my case study of permaculture in Malawi and this section will outline each research site. As mentioned in Chapter four, the research site I had organised prior to arrival in Malawi did not work out. As also stated, the man I had been in discussion with very kindly took time and effort to facilitate introductions to

other people practicing permaculture in Malawi and, following many meetings and conversations, three sites were chosen for my research.

The three sites I chose were very different in terms of number of participants, scale of activity and approach to permaculture. I felt these differences would afford deeper insight into permaculture in Malawi in that they offered a longitudinal window on social movement network activity (Blee & Taylor, 2002). As such, reasons for differences in activity and the effects of these differences were also explored during interviews and analysis.

5.5.1 *Never Ending Food* permaculture village



Plate 2: A garden in the permaculture village.

Source: Author

The Permaculture Village (code PV) is located about 45 km from Lilongwe in the small village of Chitedze and is part of a larger organisation called *Never Ending Food*, which was founded by an ex-Peace Corps worker couple who had been sent to Malawi to do HIV prevention work. Their work in HIV prevention forced a realisation that unless issues like HIV were addressed holistically and included other factors such as nutrition,

agriculture, culture and education, their work would be limited in efficacy. *Never Ending Food* is based about their home which is used as a demonstration site for permaculture in practice and as a classroom for the many trainings and workshops they host. In 2006 the couple bought the land adjacent to their home, which had some simple buildings already in place. The buildings were rented to secondary school girls with the idea of establishing a model village where permaculture principles were practised alongside a traditional lifestyle. The students, however, were neither committed to, nor interested in, permaculture; which the founding couple attribute in large part ‘to being teenagers’, and after nearly a year the students were evicted and the permaculture village was abandoned (Nordin, K. 2008). Several months after this, a visiting permaculture intern motivated and directed a second attempt at a permaculture village. This time, local children were taught life skills in sustainable agriculture. The children helped design a community garden in the village as well as individual gardens (see Plate 2) using permaculture principles and techniques such as water harvesting, efficient pathways and zoning and use of grey water. Following this, tenants were invited to move into the village, paying negligible rent, on the proviso they followed permaculture principles in their design of gardens, cultivation of plants and use of water (Thornton, 2007; Nordin, K., 2008).

The children involved in the early stages of the village, who are now in their final years of high school, have been accredited with the internationally recognised Permaculture Design Course (PDC). While residents do not typically receive formal training in permaculture, they are given informal training and help, and information and advice about permaculture is readily available (PVtr1). Of my total 33 research participants, the PV village accounted for ten villagers (code PVvi) and two trainers (code PVtr).

5.5.2 Thyolo district schools involved in the Sustainable Food and Nutrition Programme



Plate 3: A farm participating in the SFN programme.

Source: Author

In 2006, the World Food Programme (WFP) in conjunction with the Ministry of Education, Science and Technology (MoEST), and the German Society for Technical Cooperation (GTZ), launched The Sustainable Food and Nutrition programme (SFN) with the goals of improving food security, nutrition and education about nutrition in schools. The SFN programme fell under the broader umbrella policy of The School Health and Nutrition (SHN) programme and also encompasses The School Feeding programme, which aims to provide at least one meal a day to school aged children. Reliance on external agencies for food in The School Feeding programme in part explains the motivation behind the SHN programme which aimed, among other things, to teach school children, teachers and community members the skills necessary for self-provisioning (Nordin, S., 2008; WFP, 2010b).

The SHN programme is heavily supported, financially and technically, by donor partners and seeks to increase food security through using local resources rather than costly and

environmentally damaging inputs, increase crop and livestock diversity, and improve refuse and water management. Awareness raising and education about environmental sustainability and nutrition issues are also goals of the programme. As part of this broader policy, The Sustainable Food and Nutrition (SFN) programme was developed to equip teachers, students and the wider community (see Plate 3) with the necessary skills to self-provision. The Low Input Manual, which served as the linchpin for the training programme, clearly highlights a vision of sustainability that includes the ability to self-provision in its definition of ‘sustainable’, which is separated into two words: 1. *Sustain*-to continue, to keep going, forever adapting and 2. *Able* - to be possible and ‘able’ (SFIt1).

The SFN programme was piloted in four regions in Malawi and included 40 primary schools, ten Teacher Development Centres and one Teacher Training Centre with an expected pilot period of 1.5 to 2 years. Community participation was also a goal of the programme and over 150 community members and agricultural extension workers were trained in an effort to keep skills in the community should teachers move or be transferred, which frequently occurs (Save the Children, 2008; WFP, 2008). To varying degrees all schools in the initial pilot programme were able to grow food and reported satisfaction and continued interest in the programme (Nordin, S., 2008; WFP, 2008) although, as I discovered while in the field during March–May, 2011, the programme has since stalled and its future is uncertain.

Thyolo district is about 45km from Blantyre, the second largest city in Malawi, and had five schools involved in the SFN pilot programme (code SF). My introduction to Thyolo district SFN programme participants was facilitated through the research participant I had been in correspondence with before arrival in Malawi, who had been a trainer in the programme. Using a purposive snowball sampling technique I was able to meet more people involved in the programme including two civil servants who, although not officially interviewed as part of my research, I spoke with and gained some background information on the programme along with their general impressions. Eight of the total 33 research participants I interviewed were involved with the schools in Thyolo and of these eight, two participants were trainers involved in the initial training of teachers and

community members (code SFtr). Three participants were local trainers, two teachers and a community member who were trained in order to teach students and farmers in the area (code SFlt), and the remaining three research participants were local farmers who had been taught permaculture as part of the community programme (code SFfa).

5.5.3 Maziko Amoyo Wabwino Organisation



Plate 4: A MAWO farm, still intercropped and using edges.

Source: Author

The *Maziko Amoyo Wabwino Organisation* (MAWO) (code MA) translates from Chichewan to English as *Foundation for a Better Life Organisation* and was founded in the mid-1990s by a Malawian man, who had been listening to a radio show about organic farming, and researching and experimenting successfully in his own garden (MAtr1). MAWO was active in several villages governed by the traditional authority in the Chikwawa area in south west Malawi and at the height of its activity had over 200 active members, who were mostly women and often heads of their households. MAWO members received training in permaculture, nutrition, natural medicines and cooking and had two large farming demonstration sites where they built dams and constructed swales to harvest water. The sites were farmed communally and the produce shared and

occasionally sold. Alongside this MAWO had a revolving livestock programme where members were given a goat or cow to breed on the condition they return at least one offspring to pass on to other members. Unfortunately, a combination of familial jealousy, alleged political corruption and abuse of authority, and suspected witchcraft has meant a cessation of MAWO activity (MAtr1).

While MAWO continues as an organisation with a founder who still practises and teaches permaculture, a president of the board and board members, its activity has diminished considerably. MAWO currently has no demonstration site other than the founder's house, nor offers trainings or meetings for members. During the course of my interviews, however, all of the MAWO members I spoke with asked when MAWO would be having meetings again and said they missed them so it would seem a revival of MAWO is possible. Of my total research participants, MAWO accounted for 13 farmers (code MAfa) and one trainer (code MAtr).

5.6 Summary

This chapter has introduced research context, beginning with an overview of Malawi and narrowing focus first to agriculture in Malawi, then to permaculture in Malawi. Following this, I introduced my research sites: the *Never Ending Food* permaculture village, Thyolo district schools which participated in the government sponsored Sustainable Food and Nutrition Programme, and MAWO, a grassroots permaculture initiative based in southern Malawi. As explained, the research sites were chosen because they are very different in scale of activity, membership and approach to permaculture and it was thought this would offer greater insight into permaculture in Malawi and depth to my research findings, which are the subject of the next chapter.

Chapter six: Findings and discussion

6.1 Introduction

The preceding chapter described the context of my research with a brief overview of Malawi, my research sites, and permaculture in Malawi. Chapter six builds on this and discusses my research findings in order to address the main research questions of this thesis:

- i. *What does permaculture mean to people involved in permaculture in Malawi?*
- ii. *What does sustainable development mean to people involved in permaculture in Malawi?*
- iii. *Does involvement in permaculture contribute to sustainable development in Malawi?*

This chapter is divided into two main sections, each with several subsections. A key finding of this study was the considerable similarity between understandings of permaculture and understandings of sustainable development with significant conceptual overlap between perceptions of sustainable development and permaculture. Because of the commonality of concepts within understandings of both permaculture and sustainable development, rather than separating research questions one and two, this chapter is organised and analysed according to themes that emerged within perceptions. This was done as I felt a simultaneous comparison of perceptions of permaculture and sustainable development allowed for greater clarity in demonstrating and discussing similarities, while also avoiding undue repetition. Concepts that were not common to understandings of permaculture and sustainable development are identified and discussed accordingly.

The first section of this chapter explores my first two research questions, which concern understandings of permaculture and sustainable development, with subsections that detail and discuss concepts that emerged as findings of this research. Figures 4 and 5 display

perceptions of permaculture and sustainable development respectively and Figure 6 displays reasons for participation in permaculture.

Although graphs are typically associated with quantitative methodology, I feel they add to the richness of my research discussion in that they offer a visual overview of my research findings. This is also in line with Brockington and Sullivan's assertion that qualitative methodology need not abandon quantitative techniques altogether, but rather what distinguishes qualitative methodology is interpretation of data which, in turn, is engaged in exploration of meaning and understandings (2003:59). Because open-ended, semi-structured interviews were used and research participants were encouraged to answer in detail and offered multiple responses to questions, the number of responses graphically displayed exceeds the number of research participants, as each response has been entered as a separate value in display.

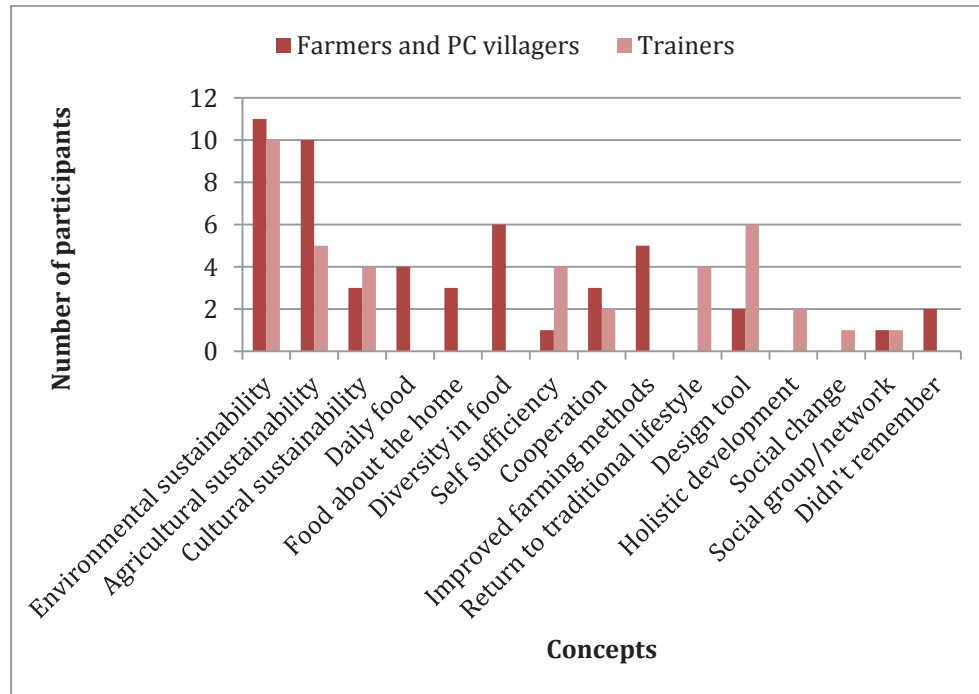
The second section of this chapter addresses research question three, which is also the main aim of this research: *Does permaculture contribute to sustainable development in Malawi?* This section draws together concepts arising from the previous section discussions of research findings, to explore whether permaculture contributes to sustainable development in Malawi.

6.2 Perceptions of permaculture and sustainable development

My initial interview questions (see Appendix 4: *Semi-structured Interview Questions*, pp.150-151) sought to explore perceptions of permaculture. Research participants were asked to explain what permaculture meant to them (see Figure 4), why they participated in permaculture (see Figure 6), and any problems or challenges with permaculture. From this, conversation turned to perceptions of sustainable development (see Figure 5). The figures below offer a visual overview of research participant perceptions. Early in my research it quickly become evident there was considerable disparity between trainer perceptions of permaculture and sustainable development with that of famer and PC

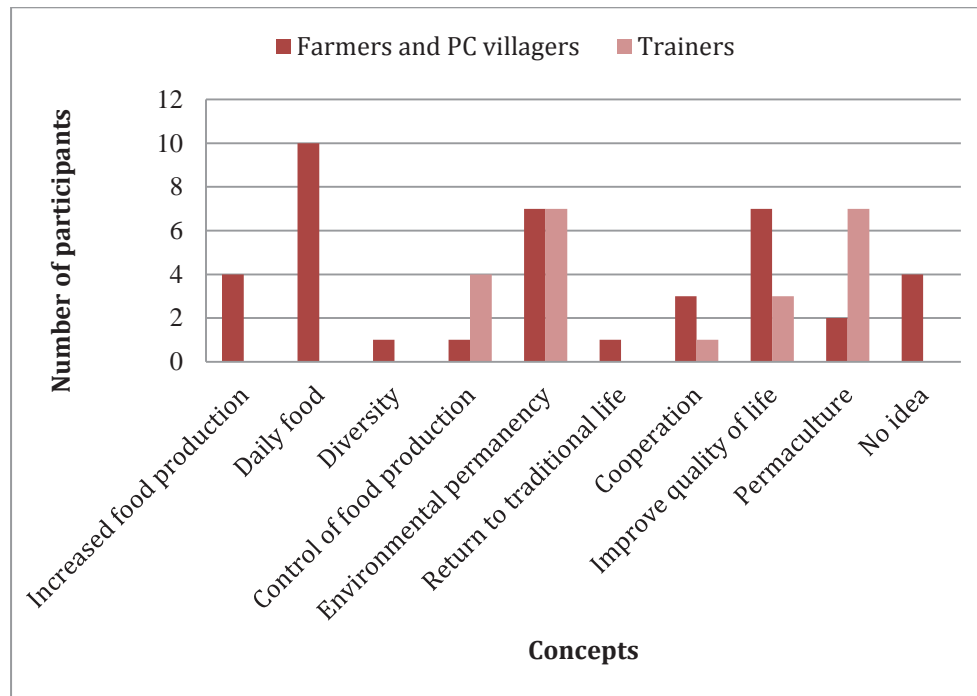
villager perceptions. Because of this clearly discernible difference, data has been separated into two categories: trainer perceptions, and PC villager and farmer perceptions.

Figure 4: Perceptions of permaculture



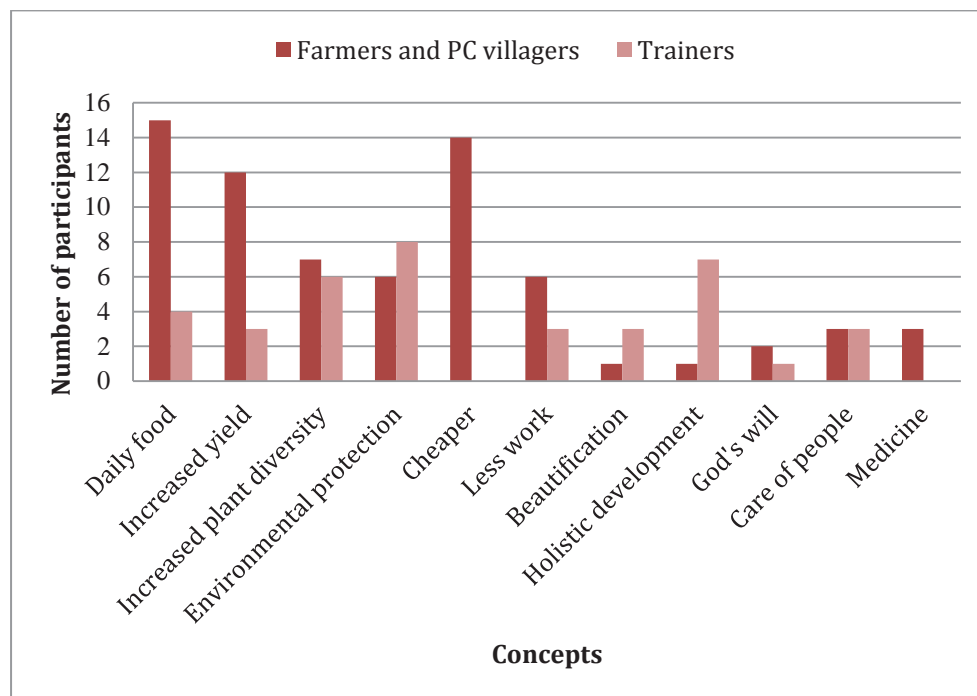
Source: Author

Figure 5: Perceptions of sustainable development



Source: Author

Figure 6: Reasons for participation in permaculture



Source: Author

Based on the above visual overview of data, a comparison of Figures 4 and 5 shows perceptions of permaculture (see Figure 4) included a wider range of concepts than perceptions of sustainable development (see Figure 5). The breadth of concepts within perceptions of permaculture is likewise reflected in the wide range of concepts identified as part of reasons for participation in permaculture (see Figure 6). In contrast, four research participants (farmers) said they had no understanding of sustainable development and, speculatively, this may be related to some confusion surrounding the concept of ‘sustainability’.

Chichewan does not offer a direct translation of ‘sustainable’ or ‘sustainable development’, with *chokhalitsa: ongoing*, and *chitukuko chokhalitsa: ongoing development*, being the closest approximation. Sometimes, when speaking with farmers or PC villagers, questions regarding sustainable development were received with some confusion and needed further explanation. Words like ‘ongoing’, ‘continuous’, ‘permanent’ and ‘daily’ were typically used, in both English and Chichewan, when explaining ‘sustainable’. The comparatively narrower range of concepts identified within perceptions of sustainable development might also be related to the ‘technical’ nature of development, wherein development is not a concept or word naturally used by those ‘developing’ or ‘being developed’ (Chambers, 1995). In line with this, a few farmers and PC villagers needed explanation of ‘development’, which was elaborated on through questions such as *What do you want?* and *What do want to change in your life?*

However, despite difference in the number of concepts within perceptions of sustainable development and permaculture, there was, for the greater part, considerable similarities between perceptions of sustainable development and permaculture. Perceptions of sustainable development and permaculture were also multifaceted and these similarities and pluralities are discussed in more detail in the following subsection.

6.2.1 Similarities and plurality within perceptions of permaculture and sustainable development

As mentioned earlier, a key research finding was that perceptions of permaculture were, for the greater part, very similar to understandings of sustainable development. One participant demonstrated this similarity, suggesting:

Permaculture is growing vegetables and constructing swales [for water conservation]
and

In bad development water erodes the soil. Sustainable development is good development because the water stops and sinks down (MAfa6).

Similarity between perceptions of permaculture and sustainability is also evident in the following participants observations:

[Permaculture is] diversity, ongoing food and protection of natural resources
and

Sustainable development is farming for ongoing food (MAfa9).

Permaculture is permanent agriculture and culture. We need to improve everything in life, society and environment
and

Sustainable development is improvement in all areas of life including infrastructure, personal health and wealth and environment (SFltr3).

The above quotes also highlight plurality within perceptions of both sustainable development and permaculture. Interviews were open-ended and semi-structured and almost all research participants offered more than one ‘answer’ when explaining their perceptions of permaculture, sustainable development, and reasons for participation. The following quotes are further examples of plurality in research participant perceptions of permaculture and indicate understandings of permaculture encompassed a number of different concepts:

Permaculture is nature conservation, controlling erosion and food production (MAfa5).

Permaculture is about local agriculture, less energy and working with nature (SFlt2).

We should manage the earth so the life circle can go round (SFlt1).

Similarly, most participants also offered multifaceted responses to the question *What does sustainable development mean?*:

Sustainable development is living the good life: having food, making the area beautiful, having stuff, saving rainwater- easy living (PVvi4).

Sustainable development is improving living standards in a way which is ecologically, socially and economically appropriate (MAtr1).

The plurality within perceptions of permaculture and sustainable development suggests research participants saw both permaculture and sustainable development as complex, multifaceted, interrelated concepts, and implications of this will be discussed further in section 6.3 *Does permaculture contribute to sustainable development?*

Another key finding was that among the plurality of concepts within perceptions of permaculture and sustainable development, ‘sustainability’ was part of almost all research participants understandings. The following subsections explore sustainability and other individual key concepts that emerged during discussions of perceptions of permaculture and sustainable development. As mentioned earlier, in light of considerable conceptual overlap between perceptions of sustainable development and permaculture, concepts related to both permaculture and sustainable development are discussed simultaneously.

6.2.2 Sustainability in permaculture and sustainable development

It quickly became apparent during interviews that farmers and PC villagers tended to have distinctly different perceptions of permaculture, sustainable development and

reasons for participation in permaculture, than those of trainers. Despite difference, however, there was also commonality among responses as the overwhelming majority of research participants, irrespective of their role and level of involvement, perceived some kind of sustainability: environmental, agricultural and cultural, as integral to their understandings of both permaculture and sustainable development. As three participants observed:

Everything you do today will come to you tomorrow (PVvi3).

When I say sustainability I mean something that will not end. I will live in it, I will die in it (PVvi2).

We should not be poisoning ourselves with our own actions (PVvi4).

Research findings, however, suggested the type and extent of awareness of sustainability issues varied significantly among PC villagers, farmers and trainers and these differences in understandings of sustainability are detailed in the following subsections.

6.2.3 Environmental sustainability

Environmental sustainability emerged as the issue most common in all perceptions of permaculture and, for farmers and PC villagers, was second only to food issues among perceptions of sustainable development:

We should manage the Earth so the life circle can go round (SFltr1).

Permaculture is getting food in an environmentally sound way (MAtr1).

Permaculture helps you look after the soil so you can keep growing food (MAfa3).

Sustainable development means not destroying the earth so we can have food (SFfa2).

Based on interview responses, it seems most research participants had an ecocentric conception of sustainable development that located society and economy within the parameters of ecological carrying capacity. Awareness of environmental sustainability is

perhaps unsurprising given how permaculture places human interaction with nature within ecological bounds and *Care for earth* is an ethical tenet. As such, the near universal perceptions of permaculture and sustainable development as being related to environmental sustainability may be a reflection of permaculture's 'success' as a social movement network in disseminating core values and promoting an ecocentric message of sustainability.

Among research participants, trainers expressed a far broader and nuanced understanding of environmental issues and the interconnectedness of the social, environmental and economic dimensions of sustainable development and permaculture. Likewise, trainers were the only research participants to explicitly suggest permaculture *is* sustainable development, which may also be unsurprising as most trainers had either formal training in development-related fields or had extensive experience in the development industry:

Permaculture is sustainable development. I see it as the only realistic option we have to bring the changes we need: ecologically, socially, morally and ethically (SFtr2).

Permaculture is recognition we don't have a future if we don't take care of the environment. If there is nothing left, what is there to develop? (PVtr2).

The idea of permaculture *as* sustainable development will be further explored in the following section as part of a broader discussion about whether permaculture contributes to sustainable development in Malawi. The next subsection, however, returns focus to another aspect of sustainability that was revealed during interviews.

6.2.4 Food sustainability and agricultural improvement

Food related issues and agricultural improvement also emerged as significant in the context of what permaculture and sustainable development meant to research participants, particularly among PC villagers and farmers.

Given the ongoing concern with food security in Malawi, a focus on food issues is both unsurprising and understandable. For two farmers, both with MAWO, increased food production was the only reason for their involvement in permaculture, while all other farmers and PC villagers included daily food or an increase in food diversity and yield as part of their reasons for practicing permaculture:

Permaculture is to have daily food (SFfa1).

Permaculture is to have enough food (MAfa6).

Permaculture is crop diversity (MAfa8).

Likewise, of the farmers and PC villagers who shared their perceptions of sustainable development (four farmers said they did not know what sustainable development was), food issues dominated perceptions of sustainable development, as evidenced in the following quotes:

Sustainable development is having enough food (MAfa5).

Sustainable development is about food and conservation of trees (MAfa1).

‘Control of food production’ was a food issue that was primarily part of trainer perceptions of sustainable development and, likewise, the conceptually similar idea of ‘Self-sufficiency’ was identified by some trainers as a reason for practicing permaculture:

It’s about being in control of the future and working together with people to have a say in our future (PVtr2).

Permaculture allows you to be free from the politics of food (SFtr2).

Although one farmer suggested that sustainable development is “finding ways to assist ourselves” (MAfa8) and another villager suggested permaculture “can help people to help themselves” (PVvi4), in contrast, most farmers and villagers tended to be more implicit with regard to food autonomy. Concepts like ‘ongoing’, ‘daily’ and ‘having enough’ are seen to indirectly signify recognition of the importance of self-provisioning of food within understandings of permaculture and sustainable development. A focus on securing

and controlling food supply within farmer and PC villager perceptions may also raise questions regarding the efficacy of current government and NGO food security policies and programmes in reaching all rural dwellers and, in turn, may lend weight to criticisms of the agricultural subsidy programmes, which critics contend are not delivering on food security or poverty reduction objectives (Sabola, 2011).

An emphasis on food within permaculture was also noted by the prominent Brazilian permaculturalist, Ali Sharif, who visited Malawi as part of *The 9th International Permaculture Convergence* in 2009. In a conversation with a research participant, Sharif said he had never been anywhere where permaculture was so focused on food (PVtr1). This observation was agreed with by a number of trainers who said they had adapted much of their permaculture trainings to meet specific Malawian needs, such as food and medicine production, and water conservation, with a reduced emphasis in training in areas such as ethics and energy considerations:

Within permaculture there is a European focus on energy and in Africa there is a focus on food (SFtr3).

This predominant focus on food suggests for many farmers and PC villagers, engagement in permaculture is based on somewhat instrumental and pragmatic concerns rather than identification with social movement values or cause. The role of instrumental goals with regard to involvement in permaculture was also signaled by the number of farmers and villagers who, alongside food considerations, also perceived permaculture as an improvement in farming methods: “different farming techniques” (MAfa8), and savings in expenses: “to have something without buying”(PVvi4). In line with this suggestion of the importance of instrumental goals, most farmers and PC villagers were unable to identify permaculture ethics and two participants could not recall what permaculture was, suggesting for a number of farmers and PC villagers social movement network values are, to some extent, of less importance than practical concerns such as methods to improve crop yield or reduce water use.

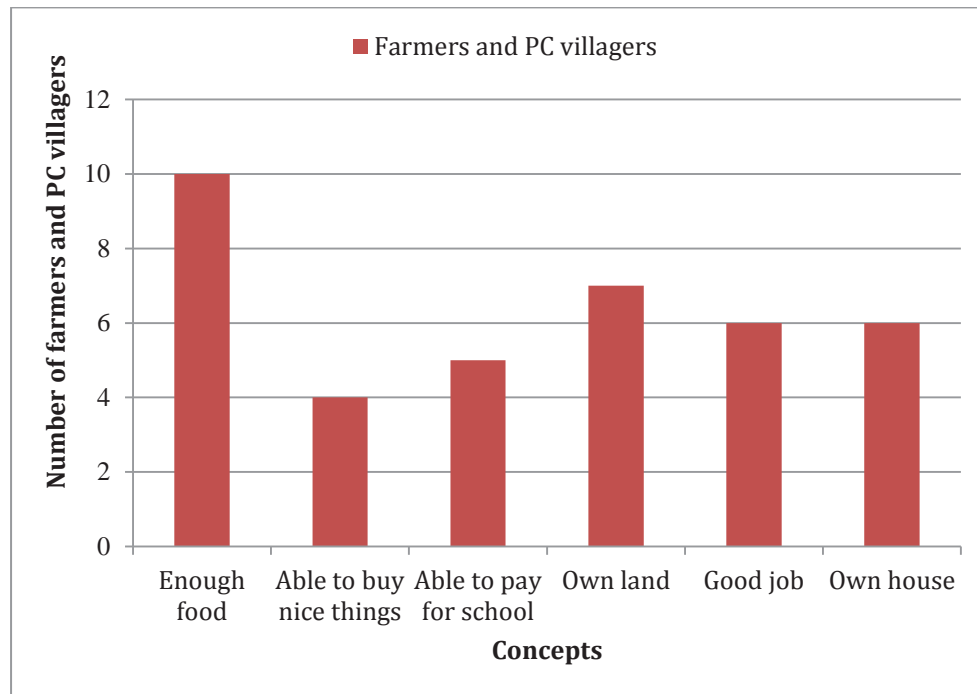
It is possible, however, the centrality and number of food issues raised in interview responses may have been a result of a potential limitation of my research. Questions about sustainable development were asked in the context of permaculture and responses to the question *What is sustainable development?* might have been skewed by an awareness research participants were being interviewed about permaculture. This awareness of a ‘permacultural context’ might explain the tendency of farmers and PC villagers to have focused on the agricultural side of sustainable development, rather than social and economic issues. Whether this was the case is speculative, however, it is my opinion ongoing food insecurity in rural Malawi explains, at least in part, the focus on food in understandings of sustainable development.

Along with food and environmental issues among PC villager and farmer perceptions of sustainable development, ‘quality of life’ emerged as another concept within understandings of sustainable development and this is discussed in more detail in the following subsection.

6.2.5 Quality of life

When PC villagers and farmers were encouraged to elaborate on *What is quality of life?* (see Figure 7), food related issues such as “having enough to eat” (PVvi2) and “never being hungry” (MAfa2) emerged as the number one concern within this concept. Other responses to this question, however, drew attention to a conspicuous area of disparity within perceptions of sustainable development and permaculture. Not one research participant related permaculture to income although, perhaps ironically, a number of trainers earn income from teaching permaculture. Similarly, a key informant I spoke with, who has lived in Malawi over 40 years and was at the vanguard of permaculture in Malawi, was clear in her opinion permaculture alone was not a strategy for survival and an income was needed.

Figure 7: What is quality of life?



Source: Author

Within an exploration of quality of life as part of understandings of sustainable development, responses such as “I want to have my own farm and be the boss” (PVvi2), “A good life is a big house with many cows and goats” (MAfa3) and “I want to buy my children everything they need” (SFfa3) were common themes, and these are seen to implicitly highlight a desire for more money, which in turn supports research that suggests economic insecurity is a significant concern among rural Malawians (Swidler & Cotts Watkins, 2009).

Other than MAWO farmers who had occasionally sold surplus from communal sites, none of the farmers or PC villagers I met had any income from permaculture although many had incorporated elements of permaculture into their cash crops through techniques such as contouring land to capture rain, companion planting, mulching and composting. These techniques, however, are not unique to permaculture, but rather of the organic ‘toolkit’ and this can be seen to raise issues regarding the commercial viability and income earning potential of permaculture. Research in Africa suggests commercial organic farming is feasible and in many instances more profitable than conventional, industrialised

agriculture which is reliant on purchased inputs such as seed, fertilisers and pesticides (UNEP-UNCTAD, 2008). Research also suggests further benefits from organic practices such as soil rehabilitation, increased biodiversity, improved farmer health and often premium market prices for organic produce (FAO, 2007; Hewlett & Melchett, 2008; Bates & Hemenway, 2010), which in turn raises the question, why then has permaculture not been implemented commercially? One research participant highlighted this perception of permaculture for personal use rather than as a commercial tool when he gestured toward another participant's home garden and said "This is permaculture" then gestured toward the maize crop which lay beyond the home and said "That is agriculture" (SF1tr1). This suggests permaculture is perceived by some research participants as limited in efficacy with regard to directly providing income although still has some instrumental value and application, such as water harvesting techniques and reducing input expenses through use of compost in place of purchased fertiliser.

Overall however, quality of life was a minor part of perceptions of sustainable development among PC villagers and farmers. Among these research participants, food issues, such as increasing yield and regular supply, were the overriding concern and, as a system for sustainable self-provisioning, permaculture is seen as a valuable contribution to a tool kit for improving quality of life as defined by research participants.

Trainers, in contrast, were less focused on food issues. Trainers tended to identify with permacultural values and relate these to involvement in permaculture and perceptions of sustainable development, which they saw in a more holistic sense, encompassing culture and lifestyle, and these concepts are discussed in the following subsection.

6.2.6 Holistic development, sustainable culture and identity

Trainers were, for the greater part, more concerned with permaculture as a strategy for sustainable development, with a greater appreciation of permaculture as a design tool for environmental and cultural sustainability, social change and as a holistic, lasting approach

to development which, as expressed by one research participant “is the only bit of development I have seen in this country that hasn’t been swept away” (SFtr2).

As part of this holistic view of permaculture and sustainable development, concepts related to sustainable culture and lifestyle emerged as significant themes, primarily among trainers, within perceptions of permaculture:

Permaculture is permanent agriculture and culture. We need to improve everything in life, society and environment (SFtr3).

It’s [permaculture] not just about farming but also an approach to life and living. It’s about what I eat, what I do to the environment and how I manage waste (SFtr3).

[Permaculture means] we can live in harmony with nature and also among ourselves (SFtr4).

The same holistic views of lifestyle and culture were also evident in many trainer perceptions of sustainable development:

Sustainable development has to be as a community. It’s not possible as to do as individuals (PVtr2).

Lifestyle is the best tool for sustainability (SFtr2).

With the exception of one villager, who also had completed the Permaculture Design Course, trainers were the only research participants to explicitly view permaculture *as* sustainable development and all trainers said their values and lifestyles had been influenced by permaculture, with most identifying themselves as permaculturalists.

This holistic view of both permaculture and sustainable development is considered significant in that it suggests the *level* or *role* of an individual within a permaculture initiative is related to social movement network influence on identity, behavior and values, and in turn, perceptions. Whereas farmers and PC villagers tended to perceive permaculture and sustainable development in an instrumental sense, trainers had a more holistic view of permaculture and sustainable development. Most trainers had some

awareness of wider structural issues such as a need to challenge unsustainable aspects of culture, aid dependency, autonomy in food production, and socio-political considerations such as poor governance and inequitable wealth and resource distribution. Most trainers also spoke of the interconnections between the concepts involved in sustainable development.

Possibly this holistic perspective is a result of trainers 'higher level' and typically longer period of time involved in permaculture which, as a social movement network, promotes systems thinking (see Chapter 3:35) and a holistic approach to interaction with the environment.

Permaculture's influence on identity, behaviour and values was highlighted in the words of a trainer who said, "My lifestyle has changed. When I take something I think how is it going to affect myself, family and environment?" He added his old desire to be rich had changed because "that type of life would not have impact on the community. If you value material things you live an isolated life" (SFtr4). Another trainer highlighted the influence of permaculture on his values when he said permaculture ethics were "not actually permaculture ethics but my ethics and people's ethics" (SFtr3).

The influence of permaculture on identity, values and behaviour also relates to concepts of 'sharing' and 'cooperation' which are discussed in the following subsection.

6.2.7 Sharing, cooperation and social groups

The idea of sharing, an ethical of tenet of permaculture, is mirrored in the Malawian proverb, *kupastsa nkulinga uli ndizinthu: You give what you have* (MAtr1) and several trainers, farmers and PC villagers cited 'sharing' and 'cooperation' and 'care for people' as part of their perceptions of permaculture, sustainable development and reasons for involvement in permaculture. From my interviews and conversations with key informants, I gained the strong impression that sharing and cooperation are part of traditional culture. I was told by several people that prior to the 1990s it was difficult to purchase seeds as they were saved and shared in communities, and I had first-hand

experience of sharing while in staying with the founder of MAWO in his small village in rural, south-east Malawi:

Back home again with my pockets and bag stuffed with freshly picked groundnuts. Delicious, but I worry they'll spoil before I can get through them all. Of course it would be too rude to refuse their food but I find myself very uncomfortable with the picture I make of a chubby girl in high tech sports sandals that cost enough to support a village for months, taking food from barefoot, skinny, old ladies with hair and teeth (or rather lack of) that cry of long term malnourishment.

(Field diary, April 24, 2011).

At the same time, however, I also gained the impression that the concepts of sharing and cooperation were, to some extent, associated with *past* culture and one trainer was told by an attendee at a workshop that sharing was “not the Malawian way” (PVtr1):

Sharing and traditional culture is difficult for youth who don't remember and are used to a money economy and products (MAtr1).

I see permaculture as reminding people what their ethics should be (SFtr3).

I see permaculture as restoring values we had in the community. I want to teach staff how to share again (from a conversation with a woman who has lived in Malawi since the 1960s and been involved in permaculture since the 1980s).

I was also told by many research participant, primarily trainers, jealousy and fear of reprisals from neighbours and family should someone be seen to be ‘getting ahead’ was a barrier to the uptake of permaculture, which also seemed at odds with the concepts of sharing and cooperation. It appears then, sharing and cooperation sit in a cultural grey area, as contested traditions and concepts that still exist for some and less so for others.

As a social movement network, permaculture promotes ethics of *Care for earth* and *Fair share* and possibly these ethics have had some influence on participants, colouring perceptions of permaculture and sustainable development with concepts of sharing and cooperation. I suspect, however, perceptions of sustainable development and

permaculture as being related to cooperation and sharing are also, to some degree, a reflection of economic insecurity and a need for strengthening social bonds and building social capital as a livelihood strategy (Scoones, 1999; De Haan, 2000; Ellis & Biggs, 2001), as evidenced in the following quotes:

Sharing makes me people love you and creates a relationship so they share with you (PVvi4).

When we are sharing surplus it means we can support one another and support culture (SFtr4).

The idea of cooperation, sharing and working with others within perceptions of permaculture and sustainable development also casts focus on the ‘social’ in social movement network, suggesting social interaction as a possible reason for involvement in permaculture. This was explicitly expressed by a farmer with MAWO who perceived permaculture as “groups which do some activities” (MAfa7). At the PC village the young men who as children had been involved in the original planning of the village spoke of their ‘permaculture club’ and how they helped each other with design and implementation. Likewise, three farmers, all from MAWO, the least permaculturally active of my research sites, spoke of how they missed MAWO meetings and activities and would like the group to become more active again. While staying with the founder of MAWO, I was shown many photos of past MAWO activities, all of large groups of mostly women sharing meals, laughing and working together on communal gardens. Given, however, the plurality in perceptions of permaculture and sustainable development, it is suggested while participation in permaculture does have a social function such as offering space and opportunity for social interaction this is one of many, rather than the only, reason for practicing permaculture.

Research participant perceptions of cooperation and sharing may also be, to some extent, a reflection of how permaculture in Malawi typically engages with people as a part of a group or, with regard to the PC village and SFN programme, with entire communities. This, in turn, may be indicative of how sustainable development is perceived when implemented at the grassroot level, largely independent of NGO and government policy,

particularly in cultures where social organisation is still communal rather than individualistic, as it is in many developed countries. My research suggests in Malawi sustainable development, as expressed through a permacultural lens, is an idea and effort that extends beyond individual concern and is viewed in a more collective sense. Whether as a result of traditional culture, or as a result of involvement in a social movement that promotes ethics of *Care for people* and *Fair share* is unclear. Based, however, on research participant responses such as those expressed above, it is my contention both contexts: traditional culture *and* involvement in permaculture, place concepts of sharing and cooperation within understandings of sustainable development and permaculture.

The influence of permaculture on perceptions is an example of its activity as a social movement network in challenging unsustainable aspects of culture and this is discussed further in the following subsection.

6.2.8 Culture and perceptions

A number of research participants, in particular trainers, perceived permaculture as “bringing old ways to the present” (SSlt3). Neither farmers nor PC villagers mentioned permaculture as a return to traditional culture, despite an old Malawian saying which reflects these ‘old ways’ and neatly captures the idea of diversity in food production asking, *Mwana alirenj? What can a child cry for?* (MAtr1). In fact, a number of farmers and PC villagers suggested the opposite; that permaculture was an improvement on old farming techniques through “modern farming methods” (MAfa2) and “different farming techniques” (MAfa8) such as composting and swale construction. Cost savings in fertilisers, pesticides and seeds, and savings in time were also considered part of this ‘improvement’ in farming methods and were widely cited reasons for practicing permaculture, with a significant number of farmers and PC villagers saying they had reduced food purchases as a result of growing their own food.

I found a perception of permaculture as ‘modern’ or ‘improved’ at odds with the large number of research participants who told me that prior to the 1990s it was nearly

impossible to buy seeds in Malawi as they were either shared or saved, which is a practice permaculture promotes. To some degree then, although among farmers and PC villagers permaculture tended to be considered modern and an improvement on traditional methods, permaculture can also be seen as a return to past methods of farming, such as seed saving and sharing, and composting or mulching crop residue as fertiliser.

This in turn relates to an ‘accidental’ finding of my research, which was the overwhelming perception among farmers, villagers and most other people I met during my time in Malawi, that maize is indigenous and nsima, a very stiff porridge made from maize, is a traditional staple food. The majority of trainers had anecdotes about workshop participants expressing anger, confusion and disgust when nsima was not offered at meal times, with one trainer recalling how an entire workshop walked out in protest at the absence of nsima (PVtr1). Two trainers, who have worked in nutrition, and a key informant I spoke with, who has lived in Malawi for over 40 years and has authored several cook books aimed at promoting healthy diets, all told me prior to the 1960s nsima was not usually made with maize alone, and instead was prepared from a mix of grains that were typically less processed and consequently more nutritious. Many trainers suggested this perception of maize as a traditional staple has resulted in the stigmatisation of indigenous crops and this is one of the greatest challenges to the uptake of permaculture.

One research participant recounted an episode, during the 2001/2 food crisis, where a woman came to his house to beg for food but refused to accept passionfruit as it is perceived as ‘poor peoples’ food (PVtr1). The same interviewee also spoke of how, about two years ago in his village, a man had been found dead from starvation in a ditch that was surrounded by blackjack, a local variety of amaranth (PVtr1). Other trainers supported this suggestion of stigmatisation of indigenous crops with similar anecdotes about farmer unwillingness to grow or eat anything but maize and suggested past and current government policies regarding maize, such as fertiliser subsidies, were largely responsible for this shift in perception. Likewise, many trainers saw the primacy of maize over indigenous crops as multifaceted: related to issues of poor governance and corruption within input subsidy programmes, and lack of education about alternatives to

maize, such as sorghum and millet, with regard to nutrition, soil health, biodiversity, water use and pest control.

Alongside stigmatisation of indigenous crops, a number of other aspects of culture that were a barrier to the uptake of permaculture, and were being challenged through involvement in permaculture, emerged in responses to questions about problems and challenges involved in permaculture. Common among research participants were stories about plants being stolen or attacked by neighbours, and tenants typically destroying or uprooting plants upon leaving rented premises. A number of trainers suggested awareness of potential repercussions from the community if someone was seen to be ‘getting ahead’ was also a factor stopping more people from adopting permaculture.

Likewise, perceptions of permaculture as ‘dirty’ and ‘messy’ were commonly reported cultural challenges. Typically Malawians sweep the ground bare around their homes (see Plate 5), whereas permaculture makes use of these edges to maximize and enhance growing space and conditions (see Plate 6). In permaculture the area around the home, zone 0, is planted with the most frequently used plants, such as those in kitchen gardens, in order to maximise time and energy efficiency. Sweeping also means loss of nutrient-rich top soil, soil erosion, reduced capacity for water retention, and considerable dust in the air, which can contribute to respiratory problems. Most trainers spoke of the continued and persistent practice of sweeping and a number of trainers said they had modified designs, moving ‘zone 0’ and high-use plantings further away from the home, to accommodate swept homes.



Plate 5: Children next to a traditional, swept house.

Source: Author



Plate 6: A 'permaculture' house; still swept but with a living roof and intercropped, edge gardens surrounding the house.

Source: Author

I was also told by a community centre owner who promotes and practices permaculture that, because of the variety of plants permaculturalists grow, there was a local perception permaculture was associated with witchcraft. Ridicule from the community after adoption of permaculture was also commonly reported among research participants and one trainer succinctly surmised, “only people crazy enough not to give a shit what their neighbours think practice permaculture” (PVtr2).

Another significant reported cultural issue perceived by trainers as a challenge to the practice of permaculture was aid dependency, or what Smith (2003) calls ‘workshop mentality’; wherein participation in workshops and trainings is related to an expectation of payment for attendance, such as living and travel allowances and meals. This was most tellingly highlighted in an anecdote a trainer shared about how he had witnessed a workshop attendee proudly displaying a newly purchased radio, saying “look what permaculture has given me” (SFtr2). All trainers had similar stories regarding workshop and training attendees expecting allowances as a condition of attendance, and these reports of this aspect of aid dependency are seen to fit with research that suggests allowance expectations are commonplace within sub-Saharan Africa (Smith, 2003; Swidler & Cotts Watkins, 2009).

I personally observed what I considered a symptom of aid dependency in Malawi where, for much of my time, I traveled by bicycle. As a foreign woman on a bicycle I was an obvious spectacle and attracted much attention, often with entire villages rushing to the road to watch and call out as I wheeled by:

Today I counted 23 adults and children who called out ‘Mzungu [foreigner], give me my money’. It’s the ‘my’ that gets me- it smacks of such entrenched entitlement. The little kids who clock my white skin and stick out their hands faster than they can speak are upsetting. It’s sort of dehumanizing. C. reckons teachers train kids in school how to say this but I don’t want to believe him. He can be a bit cynical. I can’t help but wonder if once upon a time some stupid, rich mzungu drove about flinging money out the window, or if this is simply a result of long term aid and now mzungu means money for nothing.

(Field diary, May 5, 2011).

In challenge to this culture of aid dependency and expectation of allowances, the SFN programme made very clear, and continually emphasised, that participation in the initiative was entirely voluntary and did not include allowances. Similarly, one trainer stresses in his trainings that permaculture does not need money and refuses to give allowances for trainings and does not accept donations. *Malawi is rich* is a slogan he uses in his trainings to emphasis the non-monetary resources available to Malawians (PVtr1):

It's all a mental shift. All the solutions are here. We don't need a single penny of outside funding if people make the mental shift (PVtr1).

Another trainer echoed this sentiment, suggesting permaculture was also related to “sustainability of money” because “permaculture doesn't need much money” (SFtr2).

From the preceding exploration of perceptions of permaculture and sustainable development, a number of key concepts have emerged and the following section brings these together in discussion of whether permaculture contributes to sustainable development.

6.3 Does permaculture contribute to sustainable development?

This section synthesizes the preceding sections and addresses both research question three and the key research of aim of this thesis, which is to explore whether permaculture contributes to sustainable development in Malawi. The following subsections explore various aspects of permaculture's contribution to sustainable development that emerged during this research.

6.3.1 Similarity between perceptions of permaculture and sustainable development

A key finding of this research is the considerable similarity between perceptions of permaculture and perceptions of sustainable development, although farmers and PC villager tended to have quite different understandings of permaculture and sustainable development from trainers. Among all research participants, however, irrespective of role within the research site, both permaculture and sustainable development were perceived as related to issues of sustainability, primarily environmental, but also cultural and agricultural.

PC villager and farmer perceptions of permaculture were largely centered about food and for most, this was also the central consideration within perceptions of sustainable development. Savings in cost was another significant issue in PC villager and farmer perceptions of permaculture and, as a system for self-provisioning of food without need for costly inputs, permaculture can be seen to contribute significantly to sustainable development as understood by farmers and PC villagers.

Trainer perceptions of permaculture, in contrast, tended to focus on permaculture as a holistic design tool for environmental and cultural sustainability, and for sustainable living. Similarly, trainers tended to have a more holistic understanding of the dimensions and interconnectedness of sustainable development and a number of trainers explicitly described sustainable development *as* permaculture:

I'd been studying sustainable development and not very happy with what I had read and seen but when I walked out of their house and into their garden I thought 'Oh my god- this is what it looks like' (PVtr2).

Permaculture is a design tool for sustainable livelihood, not necessarily making income, and getting food in an environmentally sound way (MAtr1).

In this respect then, according to trainer perceptions, permaculture is seen to contribute significantly to sustainable development.

A small, yet significant area of difference between perceptions of permaculture and sustainable development arose around the concept of quality of life which encompassed an implicit need for money. In this sense then, it is suggested permaculture is limited in efficacy in directly contributing to this aspect of sustainable development as perceived by research participants. However, given the savings in costs that permaculture is perceived as offering, it is suggested permaculture is not entirely without contribution to quality of life as understood by participants and has value as part of sustainable livelihood strategy and toolkit (Scoones, 1998; De Haan, 2000), in its promotion of instrumental skills, which are discussed in the following subsection.

6.3.2 Teaching instrumental skills

It is thought likely the strong focus on food within farmer and PC villager perceptions of permaculture and sustainable development is a reflection of prioritised need, in that the effects of increasing environmental degradation and costs of inputs such as seeds and chemical fertilisers and pesticides have affected ability to produce food, and widespread economic insecurity in rural Malawi has affected means to procure food (Harrigan, 2003; Chirwa *et al.*, 2008; WFP, 2010a). Thus, permaculture is also seen to contribute to sustainable development in that it equips people with a tangible set of skills to self-provision food in a sustainable, low input manner.

While the MAWO and SFN programme research sites are currently not particularly active with regard to organised permaculture activity, I observed instrumental aspects of permaculture still being practised, such as water harvesting and grey water recycling in place of less sustainable activity like chemical fertiliser and pesticide application. It would appear then, even in the absence of formal social movement network activity, as was the case with MAWO and to a lesser extent the schools, skills learnt as a result of involvement in permaculture are sufficiently useful and appropriate to be used after initiative activity has waned. This further supports the contention equipping people with

instrumental skills for low input, self-provisioning of food is a significant contribution to sustainable development in Malawi.

6.3.3 Challenging unsustainable culture

Permaculture is also seen to contribute to sustainable development in a broader societal sense, beyond the parameters of research participant perceptions. As a social movement network, permaculture is engaged in effort, and has demonstrated success, in challenging many aspects of culture that are seen to hinder sustainable development such as stigmatisation of indigenous crops, the perception of the necessity for chemical fertilisers and pesticides, and the need for a lot of money for successful food production.

Lack of education was pinpointed by most trainers as a challenge to the uptake and practice of permaculture, in particular, lack of awareness of environmental issues such as the importance of biodiversity and need to restore soil health, and lack of a fundamental understanding of nutrition and the deficiencies of a diet based primarily about processed maize. In this sense, permaculture contributes to a holistic approach to sustainable development in that the interconnectedness of dimensions of sustainable development is addressed through education about improved nutrition and environmental issues.

This adjustment of trainings to accommodate localised need, such as environmental and nutritional education, is also indicative of the iterative relationship between permaculture and culture and suggests adaptability and a context-specific approach to development that is responsive to local culture, and this is also seen as part of permaculture's contribution to sustainable development.

The best example I felt, however, of permaculture as a social movement network engaged in challenging unsustainable culture related to a young man who was employed part time by the PC village. The founder of the PC village told me how the young man from a neighbouring village had approached him to ask to learn permaculture. Throughout the following months of voluntary work with the PC village the young man kept inviting the

founder to his village to see his home and garden. Finally the founder, appreciative of the young man's demonstrated willingness to work and learn, agreed to visit and was astounded by what he saw. The young man had persuaded his family to turn over most of the land about their house to him and he had constructed swales for water harvesting, a grey water system, and gardens around all the useable edges and areas, which were planted according to permaculture principles such as intercropping and guilds. Impressed with the young man's effort, the founder worked with him to construct a composting toilet (see Plate 7) and develop his land further. Initially the young man was mocked by villagers for his effort and was told he would never marry, was living in a nest, like a bird (a comment on his lack of sweeping and intercropping) and "eating his own shit" (a comment on his composting toilet) (PVvi3). After time however, other villagers began to notice the size, health and variety of his crops and some have begun to copy his designs including, significantly, the village head.



Plate 7: The back of a composting toilet.

Source: Author

In a similar vein, two research participants, who as children were involved in the beginning of the PC village, have begun permaculture gardens at the high schools where

they board. They told me they are supported by their classmates, who are interested in learning more about permaculture and are, of course, happy to share their yield.

The above anecdotes support the contention that permaculture has been successful, to some degree, in challenging unsustainable aspects of current culture with more sustainable interaction with the environment. Speculation as to why this success has been centred about the PC village and less so at the other research sites is outlined in the following subsection.

6.3.4 Inspiring leadership and influencing ‘outsiders’

Interestingly, no PC villager mentioned practicing permaculture as a condition of living in the permaculture village in their response to the question *Why do you practice permaculture?* (see Figure 6). While some villagers were clearly more enthused and engaged in permaculture than others (of the two research participants who shared no perceptions of permaculture, one was a waged worker living in the village) I was struck by how committed the villagers were to permaculture and how enthusiastically they spoke of it, markedly more so than research participants in the SFN programme or in MAWO.

The permaculture village is different from the other research sites in that the founder lives adjacent to the village and his own home serves as both a demonstration and teaching site for permaculture. During his first year living in the area he was told by a villager that Malawians ‘don’t believe in compost, we believe in fertiliser’, however after two years, about ten houses in the area, without any affiliation to the permaculture village or formally learning any permaculture, have implemented some organic farming techniques. These techniques have been copied from the founder’s garden and organically grown maize is now more commonly grown than chemically grown maize, and crop residue that used to be burnt is instead used for compost (PVtr1). To return the idea of permaculture as a social movement network engaged in challenging culture, in this instance, conventional agriculture and non-sustainable lifestyle, it would appear then that permaculture has had some success promoting movement values to people *outside* of the social movement.

This suggests successful permaculture initiatives have significant potential to foster sustainable development that is voluntarily and spontaneously occurring at a grassroots level without need for NGO or government participation and funding, which in turn fits with a positioning of permaculture as a tool for bottom-up, sustainable development. In this respect permaculture can be seen to be engaged in challenging unsustainable culture beyond the parameters of the initiative and the influence of permaculture outside of initiative parameters is a significant aspect of permaculture's contribution to sustainable development.

This, however, does not explain the 'success' of the PC village when compared to my other research sites. The permaculture village was by far the most active of my three research sites, and there, permaculture design and practice was far more evident than my other sites. I also found the PC villagers the most informed and comprehensive in their understanding of permaculture and sustainable development and four of the villagers, the then-children who had been involved in starting the permaculture village, were the only 'non-trainer' research participants to have received formal permaculture training. As mentioned, several people within the PC village have been sufficiently self-motivated to start their own permaculture projects, and they were among the few non-trainers who were able to name permaculture ethics and relate these to themselves as self-identified permaculturalists.

To my earlier assertion, then, that role and degree of involvement within permaculture initiatives influences perceptions of permaculture and sustainable development, I add the suggestion leadership within permaculture initiatives has significant bearing on dissemination of movement values and influence on identity and behavior, and this in turn, influences the likelihood of permaculture practice. The family's embodiment of permaculture values is clearly seen in their lifestyle, identities as 'permies' and the considerable financial cost, time and effort spent establishing the PC village and parent organisation *Never Ending Food*. As such, I contend that the 'success' of permaculture initiatives, where success is measured by activity and degree and type of influence on both participants and people outside of the initiative, is related to the extent individuals, in particular leaders of the initiative, embody permacultures principles and ethics in their

behavior and identity. This contention is supported by trainers and civil servants I spoke with involved the SFN programme, who identified the enthusiasm and engagement of local trainers as critical to successful implementation of permaculture in the schools. As discussed in Chapter 3 (see pp.37-38), ethics of care and equity opens space for personal action and responsibility within sustainable development. Thus, individuals who embody permaculture principles and ethics in behaviour and identity, and the effect of this on people both within and outside of an initiative, is also considered part of permaculture's contribution to sustainable development.

6.3.5 Circumventing structural challenges

Also related to unsustainable aspects of culture, is 'government policy', which was identified by many trainers as a challenge to permaculture. While visiting one of the schools in the SFN programme I noticed an instructional step-by-step poster in the teacher training centre depicting a child planting seeds, with a step involving application of fertiliser. I thought this poster at odds with the government's ostensible promotion of permaculture and the state-developed Low Input Manual (WFP, 2008) which eschews purchased chemical fertilisers in favour of home-made, typically organic alternatives. The poster, promoting chemical fertiliser application, struck me as especially ironic in a school that had been selected as part of the SFN programme and suggested, I felt, a lack of consistency between government policy and implementation. This inconsistency was also evidenced in a conversation I had with a civil servant involved in the administration of the SFN programme. Prior to meeting the civil servant, a trainer involved in the programme had told me it was his understanding continuation of support for the programme was contingent on local level enthusiasm and commitment (SFtr2). When I asked the civil servant about the future of the programme he was vague and mentioned he 'had been meaning to call someone about it'. Our brief, casual chat also revealed he had negligible knowledge about permaculture, despite his administrative role in the programme. Similarly, he had a very superficial understanding of sustainable development, which he saw as related to acquiring new skills. Speculatively, his perception of sustainable development may be indicative of his experience as a civil

servant wherein he was likely to have attended workshops and courses, with accompanying expense allowances. This contention is supported by the belief expressed by all of the trainers involved in the SFN programme that part of the reason the programme had stalled was related to its lack of financial incentive for mid-level administration. Whether or not this was the case is unclear, however it does suggest the extent of permaculture's contribution to sustainable development may be somewhat constrained by inconsistency and lack of support in government policy and administration.

This identification of government policy and administration as a caveat to permaculture's contribution to sustainable development relates to another structural challenge I perceived in Malawi. As mentioned in Chapter five, my research in Malawi was my first opportunity to witness 'real life' development. While visiting the PC village I based myself in the capital, Lilongwe, which houses government and most foreign aid and NGO head offices. My first impression of the city was of the very evident disparity in lifestyles and wealth. I also noticed a discernible correlation between visibly wealthy Malawians and employment in the aid industry, evidenced by the expensive SUV and utility vehicles marked with agency logos, they drove. The following excerpt from my field diary highlights my perceptions of the aid industry in Malawi:

Today I visited Nature's Gift [the permaculture training centre]. I passed by the president's palace- an enormous, fortified monument to questionable taste and national accounting practices, on my way to the centre, which I was told 'is part of the resort where Madonna stays'. Lilongwe answers a question I've had since arriving...where does all the donor money go? I am particularly struck by how much bigger the Malawians are who whizz by in fancy, air conditioned, four wheel drives with NGO and foreign aid logos. Not just fatter, but taller and healthier looking, and I wonder if this height and health is the product of two or three generations of improved nutrition that began with a grandfather's lucky bet on the right political party. I also can't help but wonder if you work in development and you can wear a white shirt to work, are you helping anyone else but yourself?

(Field diary, May 10, 2011).

Although my personal perceptions of corruption are entirely speculative, while I was in Malawi reports of corruption were evident in the news. Many donors have suspended funding until increased transparency and accounting is demonstrated (AFROL, 2011; Ngozo, 2011) and in April the British envoy to Malawi was forced to leave following criticisms of financial irregularities and human rights abuses within government (BBC, 2011). A number of trainers I spoke with identified corruption as a challenge to permaculture and, in a broader sense, the efficacy of development programmes, with one trainer observing “this country has been surveyed to death but nothing has been implemented” (PVtr1). The same trainer also suggested “there shouldn’t be job security in an NGO” (PVtr1), which highlights a paradox within the aid industry where a ‘successful’ NGO, in effect, undermines the basis for its existence. This discussion of inconsistency and corruption within the aid industry and government leads to a key aspect of permaculture’s contribution to sustainable development.

Permaculture, to some extent, avoids structural issues, such as inconsistent government policy and corruption and inequitable access to resources, through self-provisioning of food in a low cost, sustainable way, irrespective of political regime and policies. Current industrialised, agricultural policy informed by a neoliberal capitalist ideology (McMichael, 2009; Bezner-Kerr, 2010) is challenged with an approach to agriculture that, to a large extent, eschews the need to purchased inputs and avoids the corruption and financial uncertainty associated with market-driven crops such as monocropped maize and tobacco. As such, this circumvention of structural issues through low-cost, self-provisioning of food is also considered part of permaculture’s contribution to sustainable development.

6.4 Summary

The first section of this chapter related my first two research questions to research findings. Research revealed significant similarity and plurality within perceptions of both permaculture and sustainable development. My findings suggested trainers tended to have a holistic view of permaculture and sustainable development while PC villagers and

farmer were more concerned with instrumental aspects of permaculture. A number of cultural issues such as sweeping, lack of education, and negative perceptions of permaculture, appeared to influence perceptions. The second section of this chapter related research findings to research question three and discussed whether permaculture contributes to sustainable development in Malawi. Research suggested permaculture significantly contributes to sustainable development as defined by research participants, as evidenced by the strong match between perceptions of permaculture and sustainable development. Permaculture is also considered to contribute to sustainable development in a broader societal sense, through influencing people outside of an initiative and as a means to circumventing structural issues within sustainable development. The following, concluding, chapter of this thesis discusses in more detail the theoretical implications of these research findings.

Chapter seven: Conclusions and final discussion

7.1 Introduction

This thesis is an exploration of how permaculture in Malawi contributes to sustainable development. The main research aim of this thesis is:

To explore whether permaculture contributes to sustainable development in Malawi.

I sought to answer the following three research questions using a qualitative, ethnographic, case study approach involving open-ended, semi-structured interviews, in-field observation and social movement network document analysis in order to address this research aim:

- i. *What does permaculture mean to people involved in permaculture in Malawi?*
- ii. *What does sustainable development mean to people involved in permaculture in Malawi?*
- iii. *Does involvement in permaculture contribute to sustainable development in Malawi?*

Chapter two discussed key concepts in sustainable development and introduced permaculture, suggesting conceptual symmetry with ecocentric sustainable development theory, wherein society and economy are placed within the parameters of the environment. A brief overview of social movement theory was given in order to provide the theoretical context for a positioning of permaculture as a global, social movement network that is engaged in challenging current unsustainable culture and activity through personal behaviour. Chapter three juxtaposed the ethical tenets of permaculture: *Care for earth*, *Care for people* and *Fair share*, against the dimensions of mainstream sustainable development theory: *Environment*, *Society* and *Economy*, in order to further develop the contention that permaculture offers a vision and strategy for genuine sustainable development. Chapter four justified my choice of a qualitative research methodology and

ethnographic case study and Chapter five gave an overview of Malawi, permaculture and sustainable development in Malawi and described the research sites used in this study. Chapter six detailed and discussed research findings arising from three months spent in Malawi undertaking research.

This final chapter, *Conclusions and final discussion*, discusses research findings and relates these to the theories outlined in Chapters two and three, exploring how this research supports the assertion permaculture contributes significantly to sustainable development in Malawi. As there was considerable similarity between perceptions of sustainable development and permaculture, I felt simultaneous exploration of concepts that emerged through research was the most appropriate structure in the interests of clarity and discussing the significance of these similarities, while also avoiding undue repetition. Following this, research question three is discussed, which addresses the research aim of this study: whether permaculture contributes to sustainable development. This chapter concludes with final comments and suggestions for future research.

7.2 Key findings of this research

My research questions (see Appendix 4, pp.150-151) sought to reveal what permaculture means to research participants and how this relates to participant perceptions of sustainable development. As detailed in Chapter two (see p.14), the concept of sustainable development is underpinned by core questions of *what* is to be sustained, *where*, *for how long* and *why* and *how* something should be developed. In Chapter three I suggested permaculture, as an ethically informed social movement network, answers these questions by positioning development within the bounds of ecosystems and guiding interaction with nature and each other through ethics of *Care for earth*, *Care for people* and an ethos of *Fair share*. Whether this was a viewpoint shared by people practicing permaculture in Malawi was at the heart of my enquiry.

My research revealed the following key findings:

- There existed a strong similarity between research participant perceptions of sustainable development and perceptions of permaculture.
- Almost all research participants saw both permaculture and sustainable development as related to sustainability, which included environmental, agricultural and cultural sustainability issues.
- Aside from a common recognition of environmental issues, farmer and PC villager perceptions of both permaculture and sustainable development were markedly different from trainer perceptions. PC villager and farmer perceptions tended to be focused on pragmatic concerns such as increasing and securing food production and reducing costs while trainers tended to understand permaculture as a social movement network that is engaged in challenging unsustainable culture. Trainers were also more likely to identify with social movement values and self-identify as permaculturalists, and many explicitly perceived permaculture *as* sustainable development.
- At sites where social movement activity had decreased or ceased, instrumental aspects of permaculture, such as organic farming techniques, were still evident even if they were not necessarily identified as permaculture.
- A number of cultural issues were identified as a challenge to involvement in permaculture, such as aid dependency, jealousy and perceptions of permaculture as untidy and unclean. There was also some contention about whether permaculture was modern or a return to traditional culture with regard to sharing and cooperation and agricultural methods.
- A significant number of PC villagers and farmers included ‘improved quality of life’ in perceptions of sustainable development which tacitly recognized a need for money. No research participants, however, identified permaculture as a strategy for income although organic farming techniques learned through permaculture such as methods for water harvesting and conservation were often employed in commercial crops.

- Initiative leaders and motivated and engaged individuals who were visibly demonstrating successful permaculture appeared to impact other participant's degree of engagement and willingness to overcome cultural issues such as ridicule and jealousy. There was also evidence that suggested successful, visible demonstration of permaculture attracted people outside the initiative to imitate instrumental aspects of permaculture design.

7.3 Discussion of research questions one and two:

What do sustainable development and permaculture mean to people involved in permaculture in Malawi?

The following subsections relate the key research findings to theoretical concepts as outlined in Chapters two and three. Research questions one and two, which are related to perceptions of permaculture and sustainable development in Malawi, are discussed in the context of this theory.

7.3.1 Multifunctionality in permaculture and sustainable development

As discussed in the Chapter six, there was considerable plurality within perceptions of sustainable development and permaculture, with all of the research participants, irrespective of their level of involvement, identifying multiple issues within both concepts, including social, environmental, economic and cultural concerns. This plurality within perceptions of permaculture and sustainable development and reasons for participation is seen to support academic literature that acknowledges the multifunctionality of agriculture and the interconnectedness of dimensions of sustainable development (IAASTD, 2009). This, in turn, suggests permaculture may be well suited as part of an approach to sustainable development, and also as part of an approach to rural development that seeks to incorporate the multifunctionality of agriculture within policies and programmes (World Bank, 2007; FAO, 2008; UNEP-UNCTAD, 2008).

Alongside plurality within perceptions of sustainable development and permaculture, another key finding was that among all research participants, irrespective of level of involvement, sustainability and environmental issues emerged as most common within understandings and this is now discussed in the following subsection.

7.3.2 Meaning construction and movement frames

At the heart of permaculture ethics and principles (see Chapter 2:21-22) is ecocentric interaction with the environment (see Figure 2, p.19), wherein the importance of conservation and rehabilitation of ecologies are central. I argue the commonly held perception of sustainability within research participant understandings of permaculture and sustainable development is, at least in part, a reflection of involvement in permaculture and is indicative of social movement network efficacy in disseminating core values. This is in line with social movement theory that, as discussed in Chapter two, suggests social movement networks may influence meaning-construction among participants (Kane, 1997; Klandermans, 2001; Mische, 2003) which, in this case, is seen as perceptions of both sustainable development and permaculture as related to environmental sustainability. The signifying role of permaculture also has implications with regard to sustainable development, and this will be discussed further in the following section, as part of a broader discussion of permaculture's contribution to sustainable development.

While trainers had more technical understandings of sustainability issues, such as carbon dioxide release from clearing land, most farmers and PC villages had personal experience of the consequences of environmental degradation and changing weather patterns. Several research participants mentioned shortened rainy seasons in recent years and expressed ongoing concern with having sufficient water for irrigation. As such, it is suggested the common perception of sustainable development and permaculture as being primarily related to environmental sustainability may also be a reflection of movement framing (see Chapter 2:26) wherein a movement operates in and is, to some extent, a response to a

broader societal and cultural context (Snow & Benford, 1992), which in this instance, is widespread societal and governmental concern with the environment as a result of increasingly evident environmental degradation.

Following this initial common perception of sustainability however, understandings of permaculture and sustainable development diverged significantly, and farmers and PC villagers tended to have quite different perceptions of sustainable development and permaculture from trainers.

7.3.3 Perceived effectiveness of permaculture

Overall, based on research findings, it appears that the majority of farmers and PC villagers viewed permaculture and sustainable development, to some degree, in an instrumental sense. Pragmatic concerns regarding increasing and securing food production, and savings in costs were within farmer and PC villager perceptions of both sustainable development and permaculture, and were given as reasons for practice of permaculture.

Passy and Giugni (2001) suggest ‘perceived effectiveness’ of a social movement as a possible reason for participation and it seems, with regard to farmers and PC villagers, this had some influence on their perceptions and practice of permaculture. Similarly, the spontaneous adoption of instrumental aspects of permaculture in the area around the PC village, and continued practice of aspects of permaculture in the SFN programme and MAWO research sites, despite lessened social movement activity, supports the assertion that permaculture is perceived, to some extent, as effective with regard to low input techniques to self-provision food.

A significant number of PC villagers and farmers included ‘improved quality of life’ in perceptions of sustainable development which recognised economic insecurity and a tacit need for money. No research participants, however, identified permaculture as a strategy for income although many cited cost savings as a reason for participation. Thus, while

permaculture may be limited in efficacy with regard to directly providing income, it appears to be perceived as an effective tool in securing food supply and reducing expenses. From a theoretical perspective, the widespread perception of permaculture as an effective tool for low input food production suggests permaculture has a place within a sustainable livelihoods strategy, which stresses diversity in sources of livelihood (Chambers & Conway, 1992; Scoones, 1998; Harrigan, 2003). Likewise, as a design system for the self-provisioning of diverse, nutritionally balanced food, permaculture is seen to foster personal and community resilience, which also links permaculture to sustainable livelihood theory (Obrist, Pfeiffer & Henley, 2010). The perceived effectiveness of the instrumental aspects of permaculture is also seen to support research that suggests organic agriculture is able to compete with conventional agriculture regarding yield (Halweil, 2007; UNCTAD-UNEP, 2008).

7.3.4 Plurality in participation

Trainers, in contrast to most PC villagers and farmers, tended to identify with permaculture ethics and values and saw permaculture as a tool for holistic sustainable development. Trainers and certain particularly engaged PC villagers tended to have more holistic perceptions of permaculture and sustainable development in that they considered issues such as increasing biodiversity, control of food production, caring for people and structural issues such as corruption, access to resources and aid dependency. Among this group there was a common perception that permaculture offered tools for challenging or circumventing, to some extent, these issues. Similarly, trainers were aware of permaculture ethics and values, which they saw as aligned with their own values, and tended to identify themselves as permaculturalists and as part of a global social movement network. It is possible trainers had a more holistic appreciation of cultural and structural issues because they tended to have higher levels of education and were more likely to be involved in the development industry, with many employed as consultants for NGOs and government. It is also possible, however, that trainer's holistic perceptions of the interconnectedness of the dimensions of sustainable development arose from their level of involvement in permaculture, which fosters a systems thinking approach (see

Chapter 3:35) to design and development. Many trainers spoke of how their way of thinking has changed as a result of participation in permaculture, with one trainer suggesting “you start thinking about what you have. Waste becomes a resource and different things are valued” (SF tr2). Whether or not a holistic view of sustainable development was a result of the influence of systems thinking within permaculture is unclear, however, it is my belief that both experience, if not education, in the development field *and* degree of embeddedness in permaculture influenced trainer perceptions of sustainable development as multifaceted and multifunctional. This, in turn, fits with a theoretical positioning of permaculture as a social movement network wherein actors occupy multiple identities and participation is relational and influenced by interconnection between identities and interests (see Chapter 2:30) (Passy & Giugni, 2001; Saunders, 2007).

To return to the earlier discussion of the perceived effectiveness of instrumental aspects of permaculture, which were largely related to increasing and securing food supply and lowering costs, the difference between farmers, PC villagers and trainers in understandings is also in line with the suggestion that participation in a social movement network arises from a shifting, dialectical combination of instrumental goals, and matching of personal and collective values and identities (Klandermans, 2001; Passy, 2003; Gillan, 2008). This also fits with Diani’s (2000a) assertion that involvement in a new social movement is related to a plurality of identities and issues, or what Passy and Giugni (2001) characterise as ‘differential participation’, where reasons for participation vary according to individual goals, interests, relationships, identities and values.

7.3.5 Food autonomy

‘Control of food production’ was the only food issue that featured more in trainer perceptions of sustainable development than farmer and PC villagers and this is considered a significant finding in that it suggests a conception of sustainable development among trainers that explicitly encompasses autonomy and self-sufficiency in food production. Similarly, control of food production was mirrored in trainer perceptions

of permaculture and reasons for participation with the concept of ‘self-sufficiency’, which one trainer described as “independent food security” (SFtr2).

Conceptually related to the idea of control of food production is ‘food security’ and farmers and PC villagers indirectly expressed these ideas through concepts such as ‘ongoing’, ‘daily’ and ‘having enough’ as part of reasons for participation in permaculture and perceptions of both sustainable development and permaculture. The perception of these concepts within PC villager and farmer understandings of both permaculture and sustainable development returns to the assertion permaculture is considered an effective strategy for self-provisioning of food, but may also indicate a possible concern with food security among farmers and PC villagers.

Perceptions of sustainable development as including concepts such as food security and control of food production may signal a failure within current government policy and practice regarding food security and possibly support Buffie and Atolia’s suggestion that Malawi is trapped in a ‘maize poverty trap’ (2009:2). Despite surplus maize production since 2007 (WFP, 2010a: xi, Reuters Africa, 2011) research participants directly and indirectly expressed an ongoing concern with food security within perceptions of sustainable development and reasons for practising permaculture. This concern supports literature that suggests structural issues such as access to, and distribution of resources, are persistently problematic areas within food security programmes, which are typically conceived and implemented at a national level (Halweil, 2006; Lee, 2007).

The suggestion of a ‘maize poverty trap’ also relates to a widely held view among trainers regarding the inappropriateness of maize in Malawi, which in turn supports research that contends monocropped maize is not an effective strategy for increasing food security (Swidler & Cotts Watkins, 2009; WFP, 2010a). This also relates to criticisms of the Agricultural Input Subsidy Programme in Malawi, which donors suggest have fostered over-dependence on maize, meaning vulnerability to fluctuations of market prices for maize and associated inputs (Buffie & Atolia, 2007:1).

Concepts such as ‘control of food production’, ‘self-sufficiency’, ‘ongoing food’ and ‘daily food’, alongside suggesting failure of current food security policies to deliver on objectives, may also signal a grassroots desire for autonomy in food production, rather than just access and availability, which is typically the focus of food security. This, in turn, suggests food security, as a policy focus, is inadequate and policy that explicitly incorporates food autonomy, may be a more appropriate focus and reflective of grassroots need. This suggestion is supported by a growing trend within Malawi, and Africa in general, where an increasing number of organisations, including most permaculture groups, are affiliating themselves with the food sovereignty movement² (Msachi, Dakishoni & Bezner Kerr, 2009; AFSA, 2010).

7.4 Discussion of research question three: Does permaculture in Malawi contribute to sustainable development?

According to research participant perceptions, and in a broader societal sense, permaculture contributes significantly to sustainable development in Malawi. The following subsections discuss key theoretical ideas related to various aspects of permaculture’s contribution to sustainable development.

7.4.1 Social movement messages

There was also considerable plurality within research participant perceptions, with all participants, irrespective of role, offering multifaceted understandings that included a diverse range of concepts. Inside this plurality however, the idea of sustainability, which included environmental, agricultural and cultural considerations, was evident in virtually all research participant perceptions of both sustainable development and permaculture.

² In 1996, the international peasant social movement *La Via Campesina* coined the term ‘food sovereignty’ to describe the “right of peoples to healthy and culturally appropriate food produced through sustainable methods, and their right to define their own food and agriculture systems” (*La Via Campesina*, 2011). The concept arose largely in response to the increasingly felt cultural, economic, social and ecological impacts of globalised, industrialised agriculture informed by a neo-liberal capitalist paradigm (Msachi *et al.*, 2009).

This awareness of sustainability issues is seen to reflect permaculture's 'success' in promoting a holistic approach to the environment and living. This in turn supports theory that suggests social movements act, to some degree, as signifying agents that are involved in meaning production (Snow & Benford, 1992), which in this context, is evidenced by the inclusion of sustainability issues within perceptions of permaculture and sustainable development. This engendering of awareness of sustainability issues is considered a key part of permaculture's contribution to sustainable development.

The signifying role of permaculture also has conceptual links to 'framing', as discussed earlier, that suggests social movements are both located in, and active in, the production of cognitive schemata that shape meanings and perceptions (Snow & Benford, 1992). Change in culture and behaviour to more ecologically sound practices is more likely to occur as a collaborative effort with mass participation and feelings of ecological, if not ethical, solidarity: in short, widespread cultural change. As a *global* social movement network engaged in challenging culture, potentially permaculture may contribute to sustainable development through a reconfiguration of global 'frames' for interaction with the environment based upon globalised ethics (Clark, 1998) of care and equity. As such, I suggest an inversion and adjustment of Zhao's assertion "the rise of new culture will lead to the rise of new kinds of social movements" (2010:33), to *the rise of permaculture will lead to a new kind of culture*. The role of permaculture in influencing unsustainable culture is discussed in the following subsection.

7.4.2 Social movement activities

D'Andrade (1992) suggests culture is an attitude, belief or behaviour shared by a significant number of a social group, influenced and experienced intersubjectively in context through social interaction and sufficiently coherent and permanent to be recognised by 'outsiders'. In this sense permaculture in Malawi, as evidenced by people in the area surrounding the PC village adopting instrumental aspects of permaculture, has demonstrated that as a social movement network it has a sufficiently coherent culture to be recognized and passed on to outsiders. This also supports the appropriateness of

Delueze and Guattari's (1987) metaphor of a rhizome being applied to social movement networks, in that initiatives inspired by the PC village have not arisen from a centralized authority, and have been self-organised (Fuchs, 2006). The spontaneous adoption of permaculture, as is happening in areas around the PC village, and the continued practice of instrumental aspects of permaculture despite lessened social movement activity, as is the case in the SFN programme and MAWO research sites, supports Passy and Giugni's (2001) suggestion that for some participants, involvement in a social movement can, in part, be explained by the 'perceived effectiveness' of social movement activity. A perception of effectiveness was also evidenced in the linking of food issues, such 'daily' and 'ongoing' food, within perceptions of sustainable development and reasons for participation in permaculture. As such, it is contended a significant part of permaculture's contribution to sustainable development lies in the effectiveness of its low input, sustainable techniques for self-provisioning of food.

Within social movement theory, much is written about social movements attempting to change culture and cultural values (d'Anjou & Male, 1998). Similarly, Dave Holmgren, one of the founders of permaculture, suggests "sustainable development to provide for human needs within ecological limits requires a cultural revolution" (2003:23) and my research found that permaculture in Malawi is engaged in activity to change a number of aspects of culture. Cuthill's assertion that "environmental problems are first and foremost social problems" (2009:5) was reflected in reports of behaviour that hindered uptake of permaculture such as jealousy, attacks on property and plants, and stigmatisation of indigenous crops. These attitudes and behaviour are areas of culture seen to impede sustainable development which permaculture is engaged in addressing through education, demonstration and promoting ethics of care and equity. Likewise, the voluntary adoption of aspects of permaculture about the PC village suggests as more people participate in permaculture there is, presumably, a lessening of ridicule, jealousy and stigmatisation of indigenous crops. This again returns to the role of social movements as engaged in meaning production where, in this context, cultural perceptions of permaculture as 'dirty' and 'unhygienic' are being supplanted by perceptions of 'ongoing food', 'cost effective' and 'diversity in yield'. Hence, the influence of permaculture on cultural perceptions is considered a significant contribution to sustainable development.

Structural issues such as widespread aid dependency, corruption, abuse of authority and inequitable access to resources emerged as another issue with regard to cultural challenges permaculture is engaged in addressing. As one research participant observed: “They [Malawians] need to be sensitised to know that to receive subsidies and things is not a good idea because it ends. They need to be sustainable in their head with their knowledge” (SFIt1). Another participant suggested “poverty is measured as an economic value and there is a poverty mindset but permaculture can change minds” (SFtr2). These quotes lend support to the argument that aid dependency is a concern regarding effective sustainable development (Jordan, 2003; Swidler & Cotts Watkins, 2009). In an effort to address aid dependency, both the SFN programme and the PC village refused to give training allowances and the PC village founder encourages a ‘Malawi is rich’ (PVtr1) mentality in order to challenge this aspect of culture. In this regard, permaculture, as a social movement, functions as a “political answer of civil society to ecological, economic, political, social, and cultural problems of modern society” (Fuchs, 2006:13), such as the structural and political issues surrounding food security and food production. As such, circumvention of structural issues through promoting an agenda of self-reliance through low input, self-provisioning of food is seen as an aspect of permaculture’s contribution to sustainable development.

Conversely, alongside challenging unsustainable aspects of culture, permaculture is also seen to be engaged in ‘protecting’ aspects of culture. Localised food is an intrinsic part of culture (Pimbert, 2008), hence, the current globalised regime of industrialised food production (McMichael, 2009; Bezner-Kerr, 2010) can be seen to threaten the autonomy of cultural reproduction. This threat was highlighted by a research participant who described how in the past the words used for each month and season were related to the food cycle, such as ‘time to harvest’ and ‘hungry time’. Now, however, as a consequence of changing food production, these words and meanings are rarely used and, to younger generations, barely known (MAtr1). In light of this, it is worth considering then how perceptions of permaculture as a ‘return to a traditional lifestyle’, while challenging current culture, may also be an association with a past culture. An association with tradition leads to the suggestion that alongside generating new meanings of sustainability, permaculture may possibly serve as a conduit to past meanings and past culture. This in

turn relates to Oniang'o, Allotey and Malaba's (2003) suggestion that food security strategies that incorporate traditional and indigenous knowledge and practices may lead to greater collaboration and partnership with communities, and this potentially furthers permaculture's contribution to sustainable development. In turn, incorporation of traditional knowledge suggests a certain degree of reflexivity is needed with regard to context, and this is discussed in the following subsection.

7.4.3 Reflexive sustainable development

Many trainers spoke of how they adjusted courses and workshops to allow for a greater emphasis on secure food production and cultivation of natural medicine, which has particular relevance in Malawi where malnutrition and disease is persistent (WFP, 2010a). Similarly, in recognition of the persistence of the custom of sweeping about homes, many trainers modified designs to accommodate this practice. Likewise, information on improving nutrition and general awareness about environmental issues were also included in trainings in recognition of lack of education in these areas, which was identified by most trainers as an impediment to the uptake of permaculture. This tailoring of trainings suggests permaculture is flexible and dialectal in its engagement with participants and is able to adapt to local need and context. As one trainer suggested, "the design process is open. There are set guidelines but how they are interpreted is up to the individual and interpretation is so diverse" (SFtr2). This adaptation to local context fits with theoretical understandings of social movement networks as responsive to context (Klandermans, 2001; Passy, 2003) and is also seen to align with Sen's (1990) suggestion of a pluralist, reflective approach to development. Space for adaptation within permaculture also answers Kemp and Martens' (2007) call for a systems thinking approach to sustainable development (see Chapter 3:35) that is accommodating of change while also shaping change. Thus, reflexivity within permaculture as a social movement network is seen to strengthen permaculture's contribution to sustainable development. Reflexivity, perforce, encompasses recognition of context, and the next subsection explores permaculture with regard to the context of rural development.

7.4.4 Rural development

In Malawi about 75% of the population work in agriculture (WFP, 2010a: xiii) which, given permaculture initiatives primarily involve rural dwellers, has implications regarding sustainable development strategies that target rural areas. In a broader societal sense, research has shown investment and growth in agriculture has a significantly greater impact on poverty reduction for those living below and on \$US1 per day when compared with investment and growth in non-agriculture sectors (Christiaensen & Demery, 2010). While the ‘investment’ of permaculture in agriculture is not financial, it is suggested there is considerable investment with regard to time, energy and skills. My research revealed that permaculture adoption is increasing in Malawi, both through organised initiatives and through voluntary, independent adoption of aspects of permaculture. Although the voluntary adoption of instrumental aspects of sustainable development in the area surrounding the PC village was not part of my research parameters; based on research participant perceptions of permaculture, it is likely permaculture adoption has meant savings in costs, comparable, if not increased, crop yield, and improved soil health. As such, the increasing, and often voluntary, adoption of permaculture is seen as a contribution to rural development within the broader context of sustainable development.

7.4.5 Personal development

I contend, however, the voluntary adoption of aspects of permaculture was not only explained by perceived effectiveness. As discussed in Chapter six, of my research sites the PC village is the most ‘successful’ in that it is still actively promoting and practicing permaculture, and people in the surrounding village have also adopted aspects of permaculture. Three people directly associated with the PC village have been sufficiently inspired and motivated to begin their own independent practice, which in one instance has been copied by people in another village some distance away, and most PC villagers, in comparison with farmers, had a deeper and more nuanced understanding of permaculture principles and ethics. In Chapter six I suggested this is likely related to leadership within the initiative, in particular, the founder’s commitment to permaculture and his

embodiment of ethics of care and equity, as evidenced by his family's ongoing and considerable time and financial commitments to the village. The founder of the PC village is seen to fit with Melucci's (1989) suggestion that a characteristic of new social movements is willingness of individuals to practice the social goals that the movement is seeking to achieve. The founder is also seen to support the idea of 'seed people': pioneering individuals, who by demonstrating alternative lifestyles and ideologies, influence the actions and identities of others (Lifton, 2009).

Giri's suggestion that improving society requires inspiring individuals to be "martyred to protect the autonomy of civil society and dignity of individuals" (2002:304) is seen as related, albeit somewhat excessive, in that my research suggests genuine sustainability requires individuals who are willing to embody permaculture principles, practice and ethics and in doing so inspire others to follow suit. This has been clearly demonstrated in the PC village where the actions of the family who began the project live as sustainably as possible. Their efforts in organic agriculture and their sharing of garden surplus with people in their community has influenced most farmers in the surrounding area and inspired a village somewhat further afield to follow suit, which in turn is seen to fit with development theories that suggests development needs to be grassroots and self-generating in order to be effective (Pieterse, 2000; Mathews, 2004).

On a personal level, all of the trainers I met were unusually kind people who unstintingly gave their time to help me in my research and facilitate meetings with other people. My concern that I would be bothering a potential research participant was dismissed as "he has to help, he's a permie" (SFtr2) and this, to me, highlighted a strong sense of permacultural identity that included and embodied the ethical tenets of permaculture. For all trainers practicing permaculture has meant time, expense, often ridicule, and in one instance a night in jail, where the trainer's popularity and lack of need for purchased fertiliser was considered a threat to the power of the local authority (MAtr1). Despite these difficulties, however, all trainers remain committed to permaculture as strategy for sustainable development and as an orientation for their personal behaviour and identity. As such, these people, who embody permaculture ethics and values in their identity and

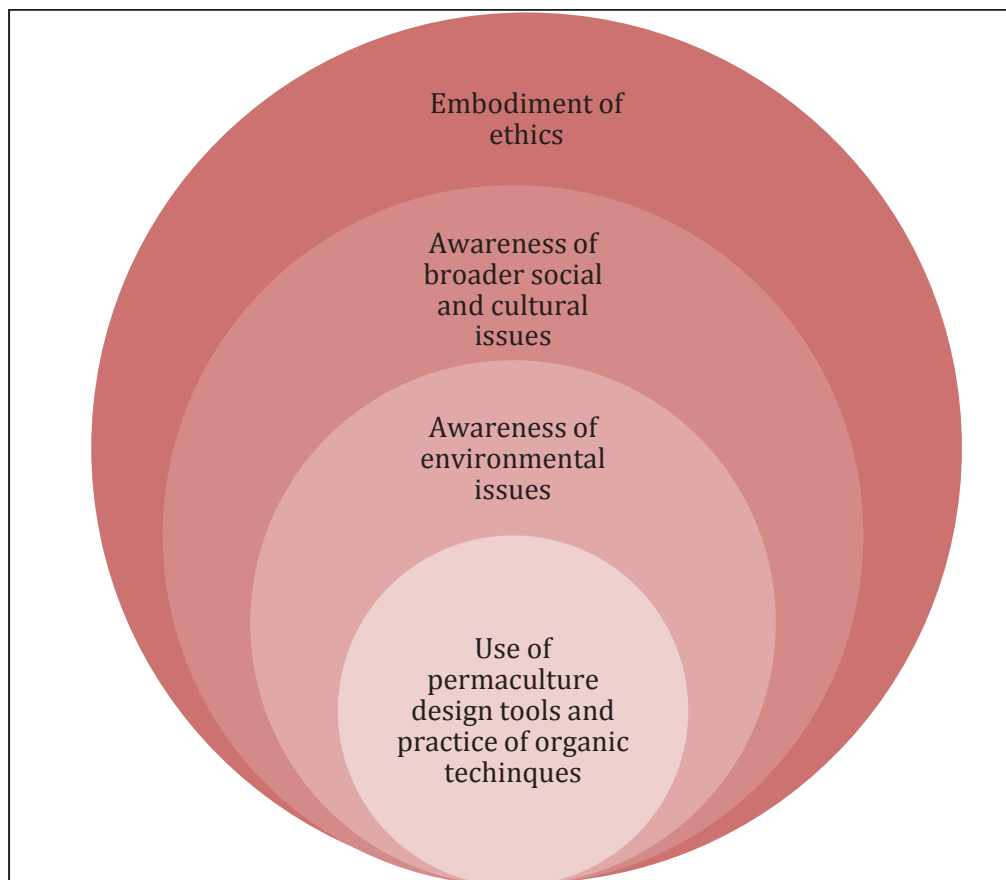
actions, are also considered part of permaculture's contribution to sustainable development.

Ethics of care and equity opens space for an exploration of personal culpability with regard to sustainable development and, as discussed in Chapter three (p.37), is seen to place personal "responsibility in the context of relationship or connection" (Kroeger-Mappes, 1994:110). While recent sustainable development theory, practice and policy have attempted to *broaden* in effort to acknowledge the interconnectedness of the concept, Giri (2002) suggests there needs to be a *deepening* to acknowledge personal responsibility. Newton (2003) asserts mainstream sustainable development is guided and enforced by a deontological ethics, expressed in language and laws of rights and duties. Permaculture, in contrast, orientates sustainable development with ethics of care and equity and *deepens* sustainable development theory and practice and, to reiterate McEwan and Goodman (see Chapter 3:40), allows for a "reinscription of the social as a site of ethics and responsibility" (2010:103). In this sense, permaculture can be seen to invert the typical top-down, and often macro, view of sustainable development theory, policy and practice, to a bottom-up, micro perspective, expressed through individual action and, potentially, identity.

This also supports Hay's (2005a) call for an inclusion of 'personal development' in understandings of sustainable development theory, policy and praxis. Similarly, personal development, within a permacultural context, has conceptual links to its position as global social movement network, orientated by ethics of care and equity, and this returns to the idea of a 'glocalised' social movement network, 'thinking and acting, locally and globally together' (Clark, 2001:18), as discussed in Chapter two (see p.31), and is also seen as a factor in permaculture's contribution to sustainable development.

Within my research there emerged a discernible pattern with regard to awareness and identification with permaculture ethics and values³ that appeared to be primarily correlated to position within a permaculture initiative. Figure 8 outlines my understanding of how permaculture values and ethics are diffused through an initiative and how this influences individuals.

Figure 8: Levels of participation in permaculture practice



Source: Author

At the innermost level, permaculture is practised for instrumental reasons related to food production in a low input way, through techniques that are not permacultural *per se* but rather, typical of the general organic farming toolkit such as composting, mulching, swale construction and companion planting. Most farmers involved with MAWO and the SFN

³ In the interests of clarity, note ‘ethics’ mean the ethical tenets of permaculture: *Care for earth*, *Care for people* and *Fair share*, and ‘values’ refer to an ecocentric conception of interaction with the environment that is underpinned by the precautionary principle (see p.41) and recognizes interconnectedness in all aspects of an ecology.

programme, and some PC villagers, seemed to fit within the first two categories, wherein most were practicing some kind of organic farming and had, to varying degrees, some awareness of environmental issues, although for some this tended to be solely based on personal experience, such as soil erosion on their farms and increasing incidences of drought. From this innermost level, there is an increasing awareness of environmental, social and cultural issues, leading to awareness of permaculture ethics and values. PC villagers who were trained in the PDC and began their own projects, and local trainers in the SFN programme, are seen as located in this ‘third level’ of participation. Most trainers fit in the outermost level of Figure 8, with a strong identification with permaculture ethics and a linking of these to perceptions of sustainable development and also personal identity. For most people at this level, permaculture *is* sustainable development.

It is suggested the ethical orientation of permaculture can potentially address cultural and structural issues that impede current mainstream sustainable development through an approach that focuses on personal development and responsibility, predicated on ethics of care and equity. As quoted in Chapter one (see p.1), Nitin Desai asserts “sustainable development is a bridge concept between economics, ecology and ethics” (UNCSD, 2007). Permaculture potentially is this bridge: linking ethics to societal organisation, which encompasses economy, and ecology through personal activity and identity.

7.5 Summary and conclusion

Permaculture contributes significantly to sustainable development as understood by people practicing permaculture in Malawi. My research revealed there are different levels of participation in permaculture. Farmers and PC villagers seemed engaged in permaculture for instrumental reasons such as learning different, low input farming techniques, while most trainers identified with permaculture ethics and values and saw permaculture as an ethically orientated vision and strategy for sustainable development. The plurality within reasons for participation supports social movement theory that suggests involvement arises from multiple issues, reasons and identities. Despite differences in perceptions between trainers and PC villagers and farmers, there was strong

overlap within individual research participant perceptions of permaculture and their perceptions of sustainable development. Many trainers explicitly saw permaculture as a holistic vision and strategy for sustainable development and identified with permaculture values and ethics. Farmer and PC villager perceptions of permaculture were also closely aligned with their perceptions of sustainable development, with the exception of the concept of quality of life which included an implicit need for money that, unlike food issues, was not considered something permaculture directly offered. In research sites where activity had waned, organic agricultural techniques were still practised and this is also seen as an aspect of permaculture's contribution to sustainable development. For virtually all research participants, irrespective of level of involvement, perceptions of permaculture and sustainable development encompassed some understanding of sustainability, which supports literature that suggests social movements are engaged in meaning production. Committed leadership and a successful demonstration site appeared to influence the spread of permaculture values and techniques, with some people within the PC village starting independent projects and some people unaffiliated to the PC village adopting organic agricultural practices. The role of leadership supports theory that suggests committed individuals, embodying social movement values, are necessary for effective dissemination of social movement message and activity.

Development implies some kind of change or movement, which may be intentional or accidental, and without reflection or thought, this change is ungoverned in intent and consequence. In a broader sense then, ethics may be seen as a constraint on unfettered, thoughtless development with moral and ethical considerations acting as both a brake and steering wheel on the impetus, direction and speed of change (Holmgren, 2004).

Permaculture as a social movement network is seen as a seedbed for the propagation of ethical living within the bounds of ecological limits. Organic farming techniques serve as a potential gateway into a more holistic view of the environment, informed by ethics of *Care for earth*, *Care for people* and *Fair share*. As such, it is the key conclusion of this thesis that permaculture is both a vision and strategy for holistic sustainable development.

I conclude this thesis with words from Ghandi (n.d., cited in Morton, 2011) which I feel describes what I felt many of the permaculturalists I met in Malawi were doing: demonstrating how to live mindfully, ethically, compassionately and sustainably:

If we could change ourselves, the tendencies in the world would also change. As a man changes his own nature, so does the attitude of the world change towards him. We need not wait to see what others do.

7.6 Suggestions for future research

- Diani (2011) suggests an area of neglect within social movement research regarding connections within, between and outside of social movements and how these connections facilitate participation. A number people around the PC village have imitated aspects of permaculture and is suggested research into the nature of their connections with the PC village would be of use when developing strategies to further permaculture adoption.
- Similarly, a number of permaculturalists I spoke with were affiliated with *Action For Natural Medicine* (ANAMED), a social movement that promotes cultivation and use of natural medicines. Research into this aspect of permaculture, from both a social movement view of plural identities and as a quantitative study of health benefits, would help highlight the multifaceted benefits permaculture offers. Likewise, a nutritionally-orientated study into the effects of permaculture may also help further permaculture selection for future government and NGO projects.
- Similarly, the iterative relationship between culture and social movements opens space for inquiry into whether people outside of the PC village who are independently practicing permaculture have any awareness of permaculture values and, if so, to what extent. This relates to the suggestion sustainable development requires cultural change, and research into diffusion of values and how and why this occurs would be of benefit in developing and implementing sustainable development policy.
- My research revealed a perception that permaculture was not suitable as an income generation strategy and inquiry as to why this perception exists and what are perceived as barriers to commercial permaculture practice would be of worth when developing strategies to increase permaculture adoption rates. This study could have easily been conceptualized within a sustainable livelihood theoretical framework and research into the efficacy of permaculture as a strategy within a sustainable livelihood toolkit may make permaculture more accessible and attractive for inclusion in future government and NGO projects.

- The role of leadership emerged as a significant key finding in this research and whether this identification with permaculture ethics and values is a result of involvement with permaculture or an ethical orientation that exists prior to involvement in permaculture was unclear. Research in this area might be of use when establishing projects and selecting community leaders and facilitators.
- The founder of MAWO highlighted a number of conceptual overlaps between permaculture and Malawian culture with regard to both instrumental aspects, and values and ethical issues. It is suggested exploration of similarities between traditional Malawian culture and the principles and values of permaculture would offer insight into how to develop culturally appropriate and effective permaculture projects.
- From a quantitative perspective, documenting increased biodiversity, soil health and increased water conservation as a result of permaculture practice would add to the body of research supporting organic agriculture and increase likelihood of permaculture inclusion in future government and NGO programmes.
- The SFN programme was, as far as I could ascertain, the largest permaculture programme targeting schools in the world and the pilot programme was generally hailed as successfully meeting all its target objectives. Why the pilot programme has yet to be implemented nationwide is somewhat unclear although discrete conversations with people involved with the programme suggests the problem is bureaucratic and investigation into the nature of the programme's 'failure to launch' would be of use with regard to effective sustainable development implementation.

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Appendices

Appendix 1: Research participant information sheet, Chichewan



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Kufufuza momwe ulimi wogwiritsa ntchito zinthu zachilengedwe wapindulira kwa anthu kuti adzitha kudzidalira paokha m'Malawi

Munthu amene akuchititsa kafukufukuyu:

Dzina langa ndine Sally Coughlan ndikuchita kafukufuku wa kubwezeretsa chonde mu nthaka ngati mbali ya maphunziro anga a Masitara Digiri ya Philosophy imene ndikuchitira ku Univesite ya Massey ku New Zealand motsogozedwa ndi Dr. Rochelle Stewart-Withers. Malingana ndi kafukufuku ulimiwu wakhala odalilika pokwanilitsa masomphenya a chitukuko chadziko. Motero, kafukufukuyu ndikufuna kupeza njira zamakono ndi kuzitukula.

Chiyambi cha Ntchitoyi:

Mu kaundula wa *Ulimi wogwiritsa ntchito Chilengedwe*, yakhala imodzi mwa njira yodalirika padziko lonse pokwanilitsa masomphenya komanso ngati njira imodzi yodzidalira pachitukuko, maphunzirowa ndi kaundula yomwe akufufuza njira yabwino/yokhazikika ya ntchitoyi komanso zobvuta zomwe anthu okhudzidwa ndi ntchitoyi akukumana nazo ndi kupeza njira yochepetsera mabvutowa.

Ndondomeko yake

Mafunso adzafunsidwa mozungulira kwa aliyense munthawi yakufuna kwake kwa munthuyo mu miyezi ya March mpaka April mchaka chino cha 2011.

Zinsisi za wina aliyense zidasungidwa mwachitetezo komanso mwachinsinsi moonjezera kapena malinga ndi kufuna kwa iye mwina otenga mbaliyo. Mabuku ndi ma kaseti adza sungidwa mwachitetezo pofuna kusunga ndi kuteteza zinsinsi za anthu otenga mbaliyo. Zotsatira ndi mafunso okhudzana ndi zochitikazi zidzalembedwa ndi kuperekedwa kwa aliyense osangalatsidwa kutengapo mbali.

Ufulu wa otenga mbali muzochitikazi

Simukukakamizidwa kutenga nawo mbali ndi zochitikazi. Ngati mwafuna kutenga mbali muli ndi ufulu uwu;

- Kusankha kusayankha funso lirilonse
- Kusiya nthawi ina iliyonse
- Kufunsa mafunso kapena kuyankhula panthawi imene mukutenga mbali
- Kupereka maganizo kumbali yomvetsetsa, dzina lanu silidzagwiritsidwa ntchito pokha-pokha inu ayeni ake ake mutasankha kutero
- Kufunsa za makaseti (ngati akugwiritsidwa ntchito) kuti athimitse pa nthawi imene mukufunsidwa mafunso.
- Kufunsa za kaseti ina (copy) (ngati agwiritsidwa ntchito pa nthawi ya mafunso) kapena zina mwa zolembe zimene amalembe zokhudza inu.

Kodi mungawapeze bwanji

Ochititsa;

Ms Sally Coughlan

Nambala ya foni yam'manja: 0992 214 005

E-Mail: sallydid@yahoo.com

Mlangizi Wamkulu

Dr. Rochelle Stewart-Whithers

Institute of Development Studies

Massey University

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Kafukufuku wa zochikazi watsimikizika kuti alibe chiopsezo, kotero kuti waunikiridwa ndi m'modzi mwa akatswiri a Ku Massey University. Ochititsa kafukufukuyakugwiritsa ntchito njira yoyenera potsatira malamulo a University.

Ngati muli ndi mabvuto okhadzana ndi m'mene ikuyendera ntchitoyi ndipo mukufuna munthu wina osati ochitsayu, muli olandiridwa poyankhula ndi Professor Sylvia Rumball, Othandizira kwa Wachiwiri kwa Wampando wa pa Univerty pa namabala iyi;

+64063505249 kapena e-mail ku humaethics@massey.ac.nz

Appendix 2: Research participant information sheet, English



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An exploration of whether permaculture contributes to sustainable development in Malawi.

Researcher introduction

My name is Sally Coughlan and this study is being undertaken in partial fulfilment of the requirements of a Masters of Philosophy degree in Development Studies at Massey University in New Zealand under the supervision of Dr Rochelle Stewart-Withers.

Project introduction

Within the framework of my thesis Permaculture is positioned as a global social movement network informed by ethics that offers a vision and strategy for Sustainable Development and this study is an investigation into perceptions of permaculture and challenges in implementing permaculture in Malawi.

Participant identification and recruitment

This study primarily involves semi-structured interviews and in-field observation with permaculturalists in Malawi. Participation is entirely voluntary and people of all ages and backgrounds are warmly and cordially invited to participate.

Interviews should be no longer than 60 minutes and participants are assured of complete confidentiality regarding information given.

Project procedure

Individual semi-structured interviews will be held at a time and place convenient to the participant over the period March and April, 2011. All personal information given will be treated with the strictest confidentiality with any identifying details adjusted or removed

in the interests of participant privacy. Notes and audio tapes stored will be securely, in order to maintain participant confidentiality and privacy.

Final research findings and conclusions will be made available to interested participants as a written report and any questions or concerns will be addressed immediately should they arise.

Participant rights

You are under no obligation to participate in this research. If you decide to participate you have the right to:

- decline to answer any question
- withdraw from the study at any time
- ask any questions or voice any concern at any time during participation
provide information on the understanding your name will not be used unless prior permission has been given.
- ask for the audio tape to be turned off at any time during the interview
- ask for a copy of the audio tape and a written copy of research results and conclusions.

Contact details

Researcher

Ms Sally Mae Coughlan
Cell phone: 0992 214 005
Email: sallydid@yahoo.com

Supervisor

Dr Rochelle Stewart-Withers
Institute of Development Studies
Massey University
Private Bag 11-222 Palmerston North
New Zealand
Office phone: +64 6 356 9099 ext. 2464
Email: r.r.stewart-withers@massey.ac.nz

This research project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher named above is responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone: +64 06 350 5249 or email humanethics@massey.ac.nz.

Appendix 3: Research participant consent form



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Participant consent form

Kalata ya kubvomereza kwa munthu opanga

An investigation into whether permaculture contributes to sustainable development in Malawi.

Kufufuza momwe ulimi wogwiritsa ntchito zinthu zachilengedwe wapindulira kwa anthu kuti adzitha kudzidalira paokha m'Malawi

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

Ndawerenga zonse zimene zalembedwa papelari ndipo ndili ndi mayankho a za maphunziro amene andifotokozera. Ndipo ndakhutitsidwa ndi m'mene mafunso anga ayankhilidwa, ndipo ndamva kuti nditha kufunsa mafunso ena munthawi iliyonse.

I agree/do not agree to the interview being sound recorded. (circle one).

Ndabvomereza/Sindinabvomereze kuti mafunso ndi ndi zimene ndiyankha zidzitengedwa mu kaseti pamene ndikufunsidwa .

I wish/do not wish to have my recordings returned to me. (circle one)

Ndikufuna/Sindikufuna kuti ndikhale ndi kaseti ya mafunso amene ndifunsidwawa (zungulizani yankho lanu)

I object/do not object to having data placed in an official archive (circle one).

Ndikufuna/Sindikufuna kuti zimene tikukambiranazi zikasungidwe kumalo osungirako zinth (zungulizani yankho lanu).

I agree to participate in this study under the conditions set out in the Information Sheet.

Ndabvomereza ndi kusangalatsidwa kutenga nawo mbali ku maphunzirowa potsatira ndondomeko imene ili pa pepalari (zungulizani yankho lanu).

Signature Sayini: _____

Date Tsiku: _____

Full name Dzina lanu lonse: _____

Appendix 4: Initial interview questions

Theme and questions	Rationale
<i>Background</i>	The following questions are intended to offer context and generate socio-economic data which may highlight any correlation between factors such as age, gender, farm size and type etc.
How many people are in your family?	
What does farming mean to you? Why do you farm?	
What is your main source of income? How many people in your household earn a wage?	
How big is your farm?	
Do you own or rent this land?	
How long have you lived here?	
If less than one year, where were you before here and why did you move here?	
What do you grow here?	This question is an inquiry into kinds of crops, e.g. medicinal, fibre, food etc.
As a percentage, how much of your food is grown and how much is bought?	
Who does what on your holding?	
<i>Permaculture</i>	
Describe what permaculture means to you.	The following are broad open-ended questions that are key to research in that they invite an exploration of perceptions of permaculture.
How did you hear about permaculture?	This may highlight a relationship between relationships, e.g. social, religious, spatial, familial, and involvement in permaculture.
How long have you been involved with this permaculture initiative?	This may highlight a relationship between time involved in permaculture and perceptions of sustainable development.
Why did you become involved with permaculture?	The following questions seek to explore any relationship between values, rationalist behaviour and participation.
What do you get from permaculture? Why do you practice permaculture?	
Of things you have mentioned which are most	

important and why?	
How much permaculture do you use in your farming methods and life?	This question relates to the following questions regarding barriers and problems to adoption and practice of permaculture.
Do you have any difficulties or issues with permaculture, as an idea and in practice?	
Have you talked with permaculture about non-practising farmers? If so, what do they think about it?	This question attempts to offer insight into how permaculturalists perceive they are perceived by others, which have salience with regard to rationale for participation and commitment to permaculture.
What do permaculture ethics mean to you?	This question is intended to explore how permaculture ethics are perceived and practised in daily life. As a similar question to an earlier broader one regarding perceptions of permaculture, this question may help also highlight consistency in responses while also adding nuance to the role of ethics in permaculture and possibly sustainable development.
<i>Sustainable development</i>	
Describe what sustainable development means to you, e.g. what does sustainable mean? What does development mean?	This question is intended to explore participant perceptions of sustainable development and as such responses are considered key to research. It is deliberately open-ended and shall be developed and further questions will likely be asked as the conversation evolves.
Is there any relationship between your understanding of sustainable development and your involvement in permaculture?	This is also a key question to research and is open-ended and likely will be explored with further questions appropriate to conversation flow.
<i>Conclusion</i>	
Is there anything you would like to add, or do you have any questions about what we have discussed?	This question invites general comment which may or may not present unexpected and relevant avenues for further discussion.