COMMUNITIES, CO-MANAGEMENT AND WORLD HERITAGE:

THE CASE OF KOKODA

Amy Louise Reggers

BBus (International Tourism)

BM (Hons)

A thesis submitted in fulfilment of the requirements of the degree of

Doctor of Philosophy

July 2013

University of Technology, Sydney

CERTIFICATE OF ORIGINAL AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Student:

Date:

ACKNOWLEDGEMENTS

I would first like to extend my sincere gratitude to Associate Professor Stephen Wearing whom, without his encouragement and constant conceptualisation and reconceptualisation of my ideas, this thesis would not have been possible. Thank you for encouraging me to do this research. Thanks also to Dr Stephen Schweinsberg for your constant support and willingness to discuss my ideas at length, often. To my final supervisor Dr Genevieve Nelson, thank you immensely for your physical and mental strength in helping me get across the Kokoda Track, relatively unscathed. I am very grateful for your help throughout my research. I would also like to thank the University of Technology, Sydney and in particular UTS: Business for the financial support that gave me the opportunity to study at the Kuring-gai Campus and the editing assistance of Matt McDonald.

I would like to acknowledge the Kokoda Track Foundation for their financial and logistical support that made the fieldwork component of this study possible. I'd like to express my utmost thanks to Bob, who without your patience, strength and smile, I would not have been able to complete the Track. My gratitude goes to the whole team who crossed the Track in February 2012 and the many who saved me from a fall more than once; because of your help, I remained *Strongpela Meri* for the rest of this research. Thanks especially to Wampy for assistance with my data collection. I felt honoured to be learning and sharing culture and research with you every step of the way. I would like to acknowledge all the participants from the villages of the Kokoda Track, Port Moresby and those who reside in Australia. Thank you for your time and insights into the fascinating Papua New Guinea.

Thanks to my family and my friends for their support throughout the last four years of my research. To all the gals at the research lab; you make coming to work so much more fun. Finally to my new husband, without your tireless support, technical proficiencies and emotional stability, this thesis would not have been completed. Thank you for supporting me and my goal, for always believing in my abilities and for doing all the housework and cooking in the final few months! Now we can start our lives together, post PhD.

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION **1**

1.1 CONSERVATION PARADIGM: THEORETICAL AND METHODOLOGICAL UNDERPINNINGS 5

1.2 THE KOKODA TRACK CASE STUDY 7

1.3 RESEARCH QUESTIONS 10

1.4 DELIMITATIONS 12

1.5 THESIS OUTLINE 13

1.6 SUMMARY 15

CHAPTER TWO: LITERATURE REVIEW **16**

2.1 THE TRANSFORMATION OF NATIONAL PARKS: PROTECTED AREA MANAGEMENT 16

2.2 RELATIONSHIP BETWEEN NATURE AND CULTURE 18

2.3 GOVERNANCE OF PROTECTED AREAS 20

2.4 WORLD HERITAGE AREAS 25

2.4.1 The World Heritage Convention 25

2.4.1.1 Evolution of World Heritage 26

2.4.2 Literature on World Heritage Areas 28

2.5 CO-MANAGEMENT 32

2.5.1 Defining Co-management 33

2.5.2 Conceptualising of Co-management 36

2.5.2.1 Power-sharing 37

2.5.2.2 Institutional Building 38

2.5.2.3 Trust and Social Capital 39

2.5.2.4 A Process 39

2.5.2.5 Problem-solving 39

2.5.2.6 Governance 40

2.5.2.7 Knowledge Generation 40

2.5.2.8 Social Learning 41

2.5.3 Moving on from Co-management: Adaptive Co-management 47

2.5.4 Adaptive Co-management and World Heritage Management 52

2.5.5 Pacific World Heritage – a testing ground for Adaptive Co-Management? ... 57

2.6 SUMMARY 64

CHAPTER THREE: METHODOLOGY **65**

3.1 RESEARCH PURPOSE 65

3.2 SITUATING THE RESEARCH 66

3.3 THE CASE STUDY AS A DESIGN FRAMEWORK 67
3.3.1 Case Study Selection Criteria *69*
3.4 CONDUCTING THE STUDY 70
3.4.1 Contextualising the Study *73*
3.4.2 Role of the Researcher *74*
3.5 RESEARCH METHODS 76
3.5.1 Interviews *76*
3.5.2 Focus Group *78*
3.5.3 Document Evidence *79*
3.5.4 Data Analysis and Presentation *80*
3.6 POTENTIAL BIAS 82
3.7 ETHICAL CONSIDERATIONS 83
3.8 SUMMARY 84
CHAPTER FOUR: FINDINGS AND DISCUSSION 85
4.1 PART 1: LOCAL MANAGEMENT: CUSTOMARY LANDOWNERSHIP OF THE TRACK 87
4.1.1 Legislation and who owns The Track? *87*
4.1.2 Landownership and Communities of the Track *92*
4.1.3 Community Management of the Track *97*
4.1.4 Summary *101*
4.2 PART 2: STAKEHOLDERS IN REGIONAL MANAGEMENT: THE INFLUENCE OF TOURISM ON THE TRACK 103
4.2.1 Conceptualising The Track *103*
4.2.2 Tourism Intermediaries and their role along the Track *108*
4.2.3 Sustainable Development and Philanthropy Improving Community Livelihoods *114*
4.2.4 The Social Effects of Community-Based Tourism *120*
4.2.5 The Management Authority and their Perception in the Community *126*
4.2.6 Summary *134*
4.3 PART 3: NATIONAL MANAGEMENT: VALUES AND INTERNATIONAL PROTECTION OF THE TRACK 135
4.3.1 Joint Understanding: Partners in National Level Management *135*
4.3.2 The Government's role and priorities in Managing the Track *138*
4.3.3 International Stakeholders and PNG's Obligations *142*
4.3.4 Challenges for National Management *145*
4.3.5 Summary *152*

4.4 CONCLUSION 153

CHAPTER FIVE: INTERPRETATION, DISCUSSION AND IMPLICATIONS 154

5.1 THEORETICAL DISCUSSION: HORIZONTAL AND VERTICAL CO-MANAGEMENT 155

5.1.1 Local Level Co-Management 157

5.1.2 Regional Level Co-Management 161

5.1.3 National Level Co-Management 169

5.1.4 Understanding Adaptive Co-Management as Governance for the Kokoda Track 175

5.2 OUTCOME AND IMPLICATIONS OF THE CASE STUDY: THE ROLE OF TOURISM 180

5.3 IMPLICATIONS FOR THEORY AND PRACTICE 183

5.4 ADDRESSING THE RESEARCH QUESTIONS 186

5.5 SUGGESTIONS FOR FURTHER RESEARCH 189

5.6 CONCLUSION 192

APPENDIX A. INTERVIEW SCHEDULE 194

APPENDIX B. INFORMATION SHEET AND CONSENT FORM 195

REFERENCES 197

TABLE OF FIGURES

FIGURE 1: PACIFIC WORLD HERITAGE TIMELINE 59
FIGURE 2: MAP OF KOKODA TRACK 72
FIGURE 3: ADAPTIVE CO-MANAGEMENT AS GOVERNANCE 156

TABLE OF TABLES

TABLE 1: IUCN CATEGORIES OF PROTECTED AREAS 21
TABLE 2: CHARACTERISTICS OF PROTECTED AREAS 24
TABLE 3: WORLD HERITAGE LITERATURE SUMMARY 29
TABLE 4: FACES OF CO-MANAGEMENT EXAMPLES 43
TABLE 5: EVIDENCE OF THE CONCEPTUALISATIONS OF CO-MANAGEMENT FROM THE GREAT BARRIER REEF WORLD HERITAGE AREA 46
TABLE 6: TOTAL NUMBER OF PARTICIPANTS BY LOCATION 73
TABLE 7: UNDERSTANDING EXISTING CO-MANAGEMENT AT THE LOCAL LEVEL THROUGH BERKES' CONCEPTUALISATIONS 159
TABLE 8: UNDERSTANDING EXISTING CO-MANAGEMENT AT THE REGIONAL LEVEL USING BERKES' CONCEPTUALISATIONS 163
TABLE 9: UNDERSTANDING EXISTING CO-MANAGEMENT AT THE NATIONAL LEVEL USING BERKES' CONCEPTUALISATIONS 171

ABSTRACT

This thesis examines co-management as a tool for exploring collaboration between stakeholders in the environmental management of natural resources. In particular, it explores how traditional landownership practices in Papua New Guinea (PNG) influence stakeholder collaboration. The research considers how co-management contributes to the development of tourism and the process of developing a protection policy required for the nomination of a World Heritage Area (WHA). The potential WHA used for this research is the Kokoda Track and Owen Stanley Ranges, PNG.

There is existing research on the changing role and legitimisation of local residents and resource users as key stakeholders in protected area management. This change can be seen in the shifting focus of international conventions and treaties, such as the World Heritage Convention (the Convention). The Convention has evolved since its inception and now recognises the need to understand the relationship between nature and culture and consequently seeks ways to create a space for the voice of the local. As a consequence, participatory approaches to conservation are reforming global protected area management. However, the research and literature reviewed in this thesis identifies that the process of engaging these key stakeholders meaningfully remains a challenge for those engaged in the management of natural resources. This appears to be particularly true where there are issues related to community-based property rights and common-pool resource use which do not fit into the pre-determined legislative frameworks of global protected area management such as World Heritage listing. Here the theory of co-management is applied to the case of the Kokoda Track WHA listing process in an effort to understand the interplay between traditional landownership practices and decentralised approaches to environmental management.

A qualitative research design was employed in this thesis incorporating informal interviews, document evidence and a focus group. The approach employed in the research considers that co-management is a process of managing relationships as much as managing resources. Therefore, an in-depth understanding of stakeholders and their relationships is pursued. The participants in this research included customary landowners of the Kokoda Track, as well as government and non-government participants, the local management authority and tourism operators. The research

findings suggest that the process of co-managing natural resources for subsistence livelihoods and tourism is a highly social and political process. It appears the success of tourism development on the Kokoda Track has been in most part due to the management of relationships between customary landowners and other stakeholders. The continuation of customary landownership, as a community-based legal system that is central to tourism, has ensured the voice of the local plays a part in ongoing management of the trekking industry.

Based on case study findings, a framework for exploring stakeholder collaboration in complex arenas was devised using Berkes' (2008) conceptualisations of co-management. This was then used to explore if customary landownership has contributed to enabling the voice of the local in the process of developing a nomination for WHA listing. The framework allows an exploration of both the *what* (the ends) and the *how* (the means) of co-management within the context of the Kokoda Track as a dynamic social-ecological arena. This process has revealed how social processes of managing the Kokoda Track for subsistence livelihoods and tourism sit within local level social structures which appear to emerge from tradition and custom. Hence, the case study provides insight into the complexities of negotiating development and conservation activities on land that is held constitutionally through customary landownership.

This thesis contributes evidence of how an understanding of the complexities of property rights, specifically community-based legal systems in countries like PNG, can contribute to decentralised approaches to working with local level stakeholders. This coincides with a current push for the inclusion of rights-based approaches to environmental management and conservation, ensuring social justice becomes a fundamental element in the process of establishing WHAs. With the movement towards elevating the rights of humans to the same level as that of nature protection, this thesis contributes specifically to how co-management might be used in the listing process of World Heritage and more broadly to the emerging dialogue of international biodiversity conservation and community values.

LIST OF PUBLICATIONS ARISING FROM THIS THESIS

Since research commencement the following papers and presentations have been published on different aspects of this study:

Reggers[*], A., Schweinsberg, S. & Wearing, S. (in press) Understanding stakeholder values in co-management arrangements for protected area establishment on the Kokoda Track, Papua New Guinea. *Journal of Park and Recreation Administration* (Managing Global Protected Areas, Special Edition).

Bott, A.L. (2012) Working towards World Heritage: Examining the Kokoda Track, Papua New Guinea, UNITWIN Network Conference Libreville, 1–8 June 2012.

Bott, A.L., Grabowski, S., & Wearing, S.L (2011). Stakeholder collaboration in a prospective World Heritage Area: The case of Kokoda and the Owen Stanley Ranges'. *Cosmopolitan Civil Societies: An Interdisciplinary Journal, 3*(2), 35-54.

Bott, A,L., & Wearing, S. (2011) Exploring new paradigms: the evolving relationship between protected area management, tourism and communities in World Heritage, ISA-RC50/ITSA Conference Shangri-La, 8-12 August 2011.

[*] The author's name changed throughout the PhD process.

GLOSSARY

For the purpose of this thesis the following definitions are used.

Customary Landownership: 'the term "Customary Land" refers to land that is not state land and is owned by the Indigenous People of Papua New Guinea whose ownership rights and interest is regulated by their customs' (Department of Lands and Physical Planning 2005)

Governance: 'is viewed as a social process that is used by society to guide relationships between a protected area agency and its constituencies as they go about articulating their interests, exercising their rights, meeting their social obligations, and mediating their differences' (Nkhata & Breen 2010, p. 404)

Tentative World Heritage List: this is a list that is created by a State Party to the World Heritage Convention and 'the tentative list is a planning tool that documents the location, description and values of an area, and compares it with other similar properties' (Rao 2010, p. 164) for the processing of planning for nomination of a World Heritage Site.

LIST OF ABBREVIATIONS

CBNRM	Community Based Natural Resource Management
CPR	Common Pool Resources
DEC	Department of Environment and Conservation
DSWEPaC	Department of Sustainability, Water, Environment, Populations and Communities
ICDP	Integrated Conservation Development Projects
IUCN	International Union for Conservation of Nature
KDP	Kokoda Development Program
KI	Kokoda Initiative
KTA	Kokoda Track Authority
KTF	Kokoda Track Foundation
NRM	Natural Resource Management
PNG	Papua New Guinea
WHA	World Heritage Area
WHC	World Heritage Committee
UNESCO	United Nations Educational, Scientific and Cultural Organisation

Chapter One: Introduction

> We acknowledge concepts of multi-scalar interaction, complexity, uncertainty, dynamism and evolution that respond to contested definitions of culture and nature (within World Heritage processes)…are encapsulated in the theory of adaptive co-management. (Hill, Cullen-Unsworth, Talbot & McIntyre-Tamwoy 2011, p. 574)

The decentralisation and democratisation of management structures governing natural resources has attempted to increase participation of stakeholders, particularly local residents and resource users[1], who were once marginalised. Of specific interest to this thesis are developments in this process of decentralisation and this research uses common property theory (also known as commons or common pool resources [CPRs]) and commons management as a lens to highlight the increasing importance of collaborating with local residents and resource users. The process of collaboration, which continues to be challenging for natural resource managers, seeks to find a balanced and equitable approach to commons management in what is considered a complex and highly contextual arena.

Common or common pool resources can be defined as 'resources that are (or could be) used collectively…(*and*) may be part of the natural world used by humans or it may be a social reality created by humans, such as the internet or an urban space' (de Moor & Berge 2007, p. 1). While there are a number of definitions within the literature, scholars generally agree that CPR are often concerned with two key characteristics: subtractability, where one person's use subtracts the amount accessible to others; and exclusivity, where complexities exist surrounding excluding others from using the same

[1] Due to the differing terminology used in the protected area literature and natural resource and environmental literature, the terms 'local residents' or 'locals' and 'resource users' will be used throughout this thesis. The term indigenous people will only be used in direct relation to literature cited. It is felt that 'indigenous peoples are seen in isolation from outside political, social and environmental influences' leading to the marginalisation of these people (Kusworo & Lee 2008, p. 112). Therefore, the term 'local residents' will denote local communities (both indigenous and non-indigenous) and local peoples residing around or within a designated protected area. Distinguished from this, the term 'resource users' is applied to cover local or non-local, indigenous or non-indigenous peoples, who use the resources of the protected area or surrounding buffer zones (whether resource use is regulated by legislation or not). For example, resource users could be using the wood from forests for fires, using plants for traditional medicinal purposes, and so on. However, when the thesis moves into the findings and discussion stage of the research, the term 'customary landowners' or 'landowners' is used as these are the terms that are contextually specific to the case. 'Customary landowners' or 'landowners' is used to distinguish between resource owners and local communities, and the resource users. The term communities is used extensively in the findings and discussion, as this is how the participants of the study chose to describe the landowners and local residents of the Kokoda Track.

resource (Berkes 2007b; Ostrom 2005; Ostrom, Gardner & Walker 1994). Both of these characteristics are equally important in understanding commons management. Berkes writes:

> The exclusion issue is important because commons management is more likely to work if the users enjoy exclusive rights to the resource and have a stake in conserving the resource. The subtractability question is important because commons management proceeds by building on existing rules-in-use, many of them at the local level. (2007b, pp. 2-3)

These issues of subtractability and exclusivity have relevance in this thesis as commons is used as a lens in this thesis to understand changing trends in natural resource management decentralisation.

The sine qua non of discourse on commons management is Hardin's (1968) *Tragedy of the Commons*. Hardin uses the metaphor of herdsmen and their grazing cattle in a common pasture to demonstrate the tragedy of common land exploitation, advocating the need for authoritarian and top down approaches to managing natural resources (Hay 2001). Hardin's seminal work along with scholarship advancing common property theory has been extensively discussed across multiple disciplines in the last few decades to describe approaches to managing natural resources. Interdisciplinary research focused on managing commons has grown scholarship in this area over the last 30 years as evidenced by the establishment of the *International Journal of the Commons*. Key authors in the field such as Ostrom, Pinkerton, Berkes, Dietz, McCay and Acheson have worked over this period to develop the body of knowledge of commons, much of which challenges Hardin's original ideals of common property theory; in particular, the development of institutional arrangements designed to manage commons has been researched and reported revealing that often decentralisation is needed in order to effectively manage CPRs (Ostrom 2002, 2005).

Commons theory has been applied to a range of natural resource management contexts including forests, fisheries, grazing fields and water sources (Agrawal 2007; Butler, Middlemas, Graham & Harris 2010; Kumar & Murck 1992; Olsson & Folke 2001). A significant portion of the empirical research investigating the ongoing struggle for natural resources, specifically in the fisheries (Berkes, Mahon & McConney 2001; Pinkerton 1989a; Pomeroy 1995, 1998) forms the basis for much of the discourse on

decentralising commons management. However, recent work by Agrawal, who identifies forests as common property alludes to some of the challenges of managing forest commons using more decentralised approaches to natural resource management. He presents a range of case studies, predominately quantitative, based on the decentralisation of forest management in India and Nepal (Agrawal & Chhatre 2006; Agrawal & Gupta 2005). The focus of this research identifies the specific demographics that are attributed to local resource users that are more likely to participate in protected area commons management (Agrawal & Gupta 2005). Agrawal's (2001) earlier works highlight the equity and distribution of local resource users engaged and participating in conservation policy development in protected areas. Importantly, Agrawal (2001) links the theory of commons with natural resource governance and provides insight, through comparative case study examples, of how common property theory can contribute to changes in natural resource governance in general and, in particular, the increase of local participation in the management of the commons.

The research in this thesis is concerned with terrestrial ecosystems such as forests commons, specifically in relation to national parks. Govan identifies that:

> novel and existing approaches urgently need strengthening and while terrestrial conservation may be more difficult to address through community conservation alone, much of the experience generated in coastal areas relating to process, techniques and governance will be invaluable. (2009, p. 30)

Issues surrounding the need to improve governance and management of CPRs were also highlighted by Hardin in 1968 in his plea for protecting national park commons. In the context of national parks, he examines the nature of national parks and questions the validity of their management philosophy, stating:

> The National Parks present another instance of the working out of the tragedy of the commons. At present, they are open to all, without limit. The parks themselves are limited in extent – there is only one Yosemite Valley – whereas population seems to grow without limit. The values that visitors seek in the parks are steadily eroded. Plainly, we must soon cease to treat the parks as commons or they will be of no value to anyone. (Hardin 1968, p. 1245)

Hardin maintains that multiple consumers or visitors to national parks need to be managed in a way to prevent degradation of commons for other visitors. Since this observation, a range of scholars have identified and conceptualised the 'consumers' or

‘users’ of commons, researching ways in which they can be managed more effectively to preserve commons for future users (McCay & Acheson 1987; Ostrom 2002). Some would argue that ‘in 1968, the American ecologist Garrett Hardin wrote “The Tragedy of the Commons” which must be the most cited article ever to appear in Science Magazine’ (Libecap 2011). Hardin’s seminal work transcends the fields of economics and political economy (Tornell & Velasco 1992) and is used as a basis to discuss tragedies of human commons within the discipline of law (Avrahm & Camara 2008). The fundamental ideals Hardin discusses in this seminal work continue to have contemporary application and its use in the field of property rights and managing resources (Buck Cox 2008; Feeny, Berkes, McCay & Acheson 1990) underpin the research in this thesis.

While Hardin and others (e.g. Castro & Nielsen 2001; Zachrisson 2008) agree that national parks or protected areas are a form of commons, this research is concerned with the discussion of commons on an international scale in relation to World Heritage Areas (WHAs). According to the *World Conservation Strategy*, a report on conservation published in 1980 by the International Union for Conservation of Nature and Natural Resources (IUCN) in collaboration with UNESCO and with the support of the United Nations Environment Programme (UNEP) and the World Wildlife Fund (WWF):

> commons is a tract of land or water owned or used jointly by the members of a community. The global commons includes those parts of the Earth's surface beyond national jurisdictions - notably the open ocean and the living resources found there - or held in common - notably the atmosphere. The only landmass that may be regarded as part of the global commons is Antarctica. (Vogler 2000)

According to the World Heritage Convention (the Convention), while a World Heritage site remains the property of the country in whose territory it is located, its ‘preservation and protection becomes a concern of the international World Heritage community as a whole’ (Michael 2011). This shifts the discussion in this thesis from the management of a commons, to how ownership of a commons can affect the management of natural resources.

This thesis uses the development and evolution of national parks and protected areas as the context to explore how management is decentralised as it relates to theories of ownership of natural resources. In Chapter Two, the evolution of protected areas over

the last century will be discussed to highlight changing approaches to management of natural resources. The focus of the discussion will centre on the management of protected areas and natural resources, highlighting the devolution and decentralisation of natural resource management and the more centralised role of local residents and resource users will be identified and tracked, as it changes throughout history. World Heritage Area (WHAs), identified as a form of global protected area, are used to frame the primary research component of the thesis due to complexities surrounding ownership and management of global commons. However, while the rise of international conservation policies and the increasing number of World Heritage Areas (WHAs) around the world provide an avenue to explore how ownership and management function, fundamental paradigms of conservation need to be highlighted for the purpose of this study.

1.1 Conservation Paradigm: Theoretical and Methodological Underpinnings

This section highlights differing perspectives of conservation. In particular, functionalism is presented as the underpinning to the international conservation paradigm and consequently considered important in relation to the research in this thesis.

Western scientific approaches have dominated the conservation paradigm for the last century (Soule 1985). The basis for this approach ensures that humans are to be considered as separate from nature. Callicot, Crowder & Mumford (1999, p. 22) have classified the approach as compositionalism, which ‘comprehends nature and being primarily by means of evolutionary ecology’ and constitutes the preservation of wilderness in isolation from human contact as paramount. It is this approach that has underpinned much international conservation effort (Zurba 2010), with the thought that human modifications of nature are unnatural and should be prevented. This has been reflected in the quest for conservation through the designation of protected areas and management frameworks globally. According to Hunter (1996):

> The compositionalist emphasis on the preservation of biodiversity or biological integrity and on ecologically restoring areas that have been adversely but not irredeemably affected by commercial fishing, industrial forestry, or agriculture is

> appropriate for actual and potential designated wilderness areas, wildlife refugees, national and state parks, world heritage sites, the core areas of international biosphere reserves and the like…(cited in Callicott, Crowder & Mumford 1999, p. 31)

However, scholarship surrounding the conservation paradigm has evolved significantly in the last twenty years with respect to an opposing view of nature: functionalism (Callicott, Crowder & Mumford 1999). This approach 'comprehends nature primarily by means of ecosystem ecology and considers Homo sapiens a part of nature' (Callicott, Crowder & Mumford 1999, p. 22). Common terminology within the functionalist worldview includes ecosystem health, adaptive management and sustainable development (Callicott, Crowder & Mumford 1999). These concepts appear frequently now in international conservation efforts and are paving the way for the recognition of local residents and resource users as an integral part of conservation management.

Capturing local voices in the development of commons management however is not a simple process (Pinkerton, Heaslip, Silver & Furman 2008). With discrepancies in the classification of what constitutes commons, devising appropriate management frameworks that legitimise local perspectives is exigent. There has been suggestion that the role (or potential role) of local voices in the development of management plans is linked to the precise classification of commons (Balint 2006). Balint argues that the voice of locals is easier to justify in CPR management than protected area management. He uses the locals' ability to effect legislative changes as a distinguishing factor between CPR and protected areas.

The idea that ecosystems[2] and natural resources need to be managed to include humans, not in isolation from them, is commonplace in anthropological discourse (Natcher, Davis & Hickey 2005). Authors have argued that management of CPRs that attempts to

---

[2] Ecosystem-based management (EBM) is another environmental management concept that evolved with the increased recognition of humans as an integral part of nature conservation. The concept of managing ecosystems as a whole derives from the works of Leopold in the 1940s and is defined by the United Nations Food and Agricultural Organisation as an approach that 'strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties of biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries' (Young, Charles & Hjort 2008, p. 3). This thesis acknowledges its relevance in environmental management of protected areas but has chosen to use Common Pool Resources (CPRs) and property rights as a conceptual base, and the notion of decentralising environmental management using co-management theory, EBM is relevant however not within the conceptual scope of the research undertaken in this thesis.

include the needs of locals is often in the form of co-option, not collaboration (Singleton 2000). This leads to the need to introduce property rights, specifically in relation to those protected areas in Melanesia where increasing activity in the listing and gazetting of protected areas can be seen, and because significant differences exist compared to property rights around the world. To this end, co-management theory and associated literature that stems from commons discourse form the basis for the theoretical inquiry of this thesis. While there is often discussion on community-based projects[3], this thesis suggests that co-management theory (which will be defined and explored in depth in Chapter Two) may be suitable to explore natural resource management and decentralisation in this case study situated in Papua New Guinea (PNG).

1.2 The Kokoda Track Case Study

The case study selected for this research provides an opportunity to investigate the establishment of a WHA and the development of appropriate management strategies in a country where issues of landownership and natural resource management are socially and politically complex. The study site, the Kokoda Track in PNG, is used as a case study to explore issues of property rights in a region that has been identified for potential WHA designation. This site provides an opportunity to use co-management theory as a vehicle to explore how the voice of the local is heard within current management of this region.

The Kokoda Track region provides the case study for this research where issues of ownership and CPRs may have influence on the nature of natural resource management. This is due to existing property rights in PNG where literature has specifically stated customary land in PNG can be considered a commons in relation to protected area

[3] The literature on community-based natural resource management (CBNRM) is extensive. While CBNRM contributes to the conservation paradigm shift discussed in section 1.2.1, in that it advocates participatory approaches to conservation, it also contributes significantly to the body of knowledge helping to understand how local and often indigenous people are encouraged and empowered to be involved in projects that benefit themselves and their livelihoods (For a detailed explanation of the characteristics of community-based management see Guaigu, Prideaux & Pryce 2012). However, for the purpose of this thesis, CBNRM literature will not be investigated, as the purpose of this study is to understand the implications of empowered (by legislation governing customary landownership) communities and their current or potential role in co-management arrangements that are being driven from government, not community levels. To this end, information regarding property rights in CBNRM cases around the globe, and the influence of these rights on the abilities of local communities to be more or less involved in management, has been explored.

development (Eaton 1997; Stevens 1997a). Customary land refers to any land managed through custom, religion or traditional law (Department of Lands and Physical Planning 2005; Stevens 1997a). Customary landownership as a form of property rights in PNG and the wider Pacific has also received much attention in academic discourse, particularly around development.

Hughes (2004, p. 4) argues that the lack of development and specifically the 'primary reason for deprivation in rural Pacific communities' is the continuation of communal landownership. Gosarevski, Hughes and Windybank (2004, p. 134) posits the need for individual property rights to be introduced through a process of land registration, to encourage entrepreneurs and individuals to plan and use their land as they wish, to result in 'rising productivity and living standards'. While these authors believe communal landownership is the 'ultimate cause of economic stagnation with its dire economic and social deprivation' (Gosarevski, Hughes & Windybank 2004, p. 134), there also exists the view that the continuation of traditional communal styles of land tenure is more appropriate.

However, Fingleton (2004) suggests that PNG will not survive or develop without the continuation of customary landownership. He presents his argument with supporting evidence from the United Nations Food and Agriculture Organisation; customary tenure in PNG provides a security net for rural communities, customary tenure systems are adaptable and land rights are usually well defined (Fingleton 2004) despite the lack of land registration details recorded with the State. Stephens (2008) also asserts that uncodified, that is, unregistered in the case of PNG, frameworks that regulate access such as customary landownership have benefits such as plasticity and inclusiveness. It is then suggested that these systems allow 'communities to adapt tenure systems over time to meet new demands, including environmental and demographic changes' (Stephens 2008, p. i). This is supported in government circles as is implied when the Deputy Secretary of the Department of Lands and Physical Planning in PNG argues that 'land is life or life is land. Accordingly, you take one away and there is no existence' (Kila Pat 2003, p. no pg). Lynch and Alcorn (1994, p. 375) suggest that 'Indigenous peoples commonly say that the land owns the people. These complexities make it difficult for outsiders to understand or accurately codify the structure of a given

community's tenure system and hence present a particular challenge' for conservation and management.

Some of the challenges presented here, particularly of working with customary landowners, have become important in the pursuit of increased biodiversity conservation efforts in PNG (Department of Environment and Conservation 2011). Currently, there is a push domestically in PNG to develop a more effective protected area policy that increases the number of protected areas and work toward PNG's international commitments on biodiversity conservation (Department of Environment and Conservation 2011). The Kokoda Track has been highlighted as one area to consider for a protected area through the designation of a potential WHA (Papua New Guinea Government & Australian Government 2010).

The issues of landownership as a form of property rights, protected area establishment and World Heritage converge in this research. These complex issues in PNG may influence the overall trend towards decentralisation in natural resource management. WHAs are particularly important in the debate of decentralisation of natural resource management because of the 'involvement of international, national, regional and local stakeholders' (Su & Wall 2012, p. 1). There is currently a need to better understand how customary landowners can interact with protected areas in PNG (Department of Environment and Conservation 2011) and this research suggests that co-management, as a theory identified to aid the process of decentralisation, may be used to help understand the complex nature of landownership in a potential WHA. Castro and Nielsen (2001, p. 231) argue that 'a major justification for co-management is the belief that increased stakeholder participation will enhance the efficiency and perhaps the equity of intertwined common property resource management and social systems'. It may be suggested then that investigation into the social-political complexities of landownership, as it relates to natural resource management approaches to CPR, could potentially shed light on the nature of the social process that exist to manage the customary land of the Kokoda Track for the process of establishing a protected area and nominating the region for World Heritage status.

1.3 Research Questions

This thesis considers the land of the Kokoda Track as a CPR and therefore suggests that theories developed to manage commons or CPRs are an appropriate avenue for investigating the nature of relationships guiding natural resource management. As the socio-political context for this case suggests the role of the customary landowners is a core component of managing natural resources of the Kokoda Track, the theory of co-management is used to explore the current process of natural resource management in this potential WHA. Co-management theory (which will be explored in the literature review in Chapter Two) is considered an appropriate avenue to identify and develop appropriate structures to manage natural resources while consciously creating a space for local stakeholder voices to be heard (Pinkerton et al. 2008).

In setting out the parameters of this study the following aim and research questions have been identified:

> **The aim of this research is to explore co-management as a concept for understanding collaboration and a tool for the development of a World Heritage nomination for the Kokoda Track.**

Three research questions have been developed, they are:

- **How can co-management be used to investigate the collaboration of stakeholders in the listing of a World Heritage Site?**
- **How does co-management enable local communities to become engaged in the listing of a World Heritage Site such as the Kokoda Track?**
- **What is the influence and impact of traditional landownership practices on the listing process for a World Heritage Site?**

In responding to the research questions, this study seeks to make a number of contributions to the body of knowledge. Overall, the research will demonstrate what role co-management can have as a tool for understanding complex multi-scale collaborations between stakeholders. It will highlight that a deeper understanding of the relationships behind resource management can result by exploring existing stakeholder collaboration at local, regional and national levels. Further, against the overall trend of

diagnostic research into co-management and WHA establishment, this thesis will present a systematic study of a complex social-ecological arena, prior to the formal inscription of a protected area or WHA, for the purpose of understanding how the voice of the local is heard in this global process.

In particular, this research will contribute to the academic literature on protected area management, WHAs and natural resource management. The use and application of co-management theory in a complex social-ecological arena provides direct insight into how multiple stakeholders are currently collaborating for the purpose of resource management. Findings from this study can particularly contribute to a greater understanding of how co-management theory can be applied in a setting where local level stakeholders hold significant legislative decision making powers. By understanding the application of co-management in a case where, unlike most research, the local level stakeholders hold legislative decision making powers, strategies can be developed to ensure those who hold decision making powers are at the centre of protected area and WHA development.

Furthermore, this research will provide a deeper understanding and insight for protected area and WHA managers in cases where local level stakeholders hold significant decision making powers. Currently, there is a lack of information from practitioners about the most suitable management approaches for dealing with customary landowners in Pacific Island protected areas, and a limited understanding of how this influences the development of WHAs. A detailed understanding of the nature of existing land management approaches at the local, regional and national level can provide insights as to how to design appropriate protected area strategies.

Finally, this research may be used to raise awareness of equitable and socially-just approaches to establishing protected areas and WHAs in developing countries, particularly where the land based resources are under customary ownership of local communities and tourism is a prominent activity for those communities. Decisions on protected area and WHA establishment have commonly pursued the approach of acquiring land use rights from customary owners. Rather, this research suggests that by applying co-management theory to understand social and cultural dimensions of existing natural resource management practices, policy makers and developers may be

able to create a better understanding of the stakeholders and thus create the possibility of a more equitable and ethical approach to conservation that can encompass the traditional uses and approaches of local level stakeholders (in this case where tourism is found to be the focus of those stakeholders).

1.4 Delimitations

Due to the nature of this study and the location of the fieldwork component, there are three delimiting factors. The Kokoda Track is a 96km walking track through the dense Owen Stanley Ranges in the Papua New Guinean jungle. Due to the terrain and intensity of trekking through this region, this study will be limited to contacting participants who reside in villages that sit directly on the Kokoda Track and participants that reside in the PNG capital, Port Moresby or in Australia. There are large groups of villages and communities that are located within the Owen Stanley Ranges but not on the Kokoda Track. Due to issues of safety and personal security, this study focuses on those communities that are located on the Track which are canvassed in the work of the Kokoda Track Foundation - the non-government organisation which supported this research (the role of this organisation will be detailed in Chapter Three).

Next, this study was conducted entirely in English. While, recognising that PNG is known for the diverse and significant number of traditional languages spoken throughout the country, the research was delimited to participants who can converse in English. A large number of community members living on the Kokoda Track do speak English. English is the language of education, instruction and government. To support participants who were not confident in English and to assist with language and cultural barriers, a cultural translator/interpreter was present throughout the data collection process in the villages along the Kokoda Track.

Finally, this research employs a qualitative case study approach to understand and to explain a specific social real-world phenomenon. This approach is delimited by its subjective nature, yet it is empowered by the same as it captures in-depth the uniqueness of a particular situation from an insider's perspective (Neuman 2003). While the findings of this study cannot be generalised across all of the PNG or the Pacific, the principle of extrapolation should be useful when applying specific findings and

concepts to other similar scenarios, of which there are many across the region. Supporting this claim, Walton (1992, p. 129) notes that when knowledge generated from specific contemporary cases is extrapolated rather than generalised, then 'case studies are likely to produce the best theory'. This means that key findings, concepts and ideas presented in this case study may be used to inform both future research and the management of similar development projects.

1.5 Thesis Outline

This thesis is organised into five chapters. Chapter Two reviews the literature on the transformation of protected areas and specifically the evolution of World Heritage, as a global protected areas. The chapter follows the changing nature of how local residents and resources users interact with protected areas and how their role has changed. Primarily, this chapter highlights how disenfranchised local residents and resource users in and around protected areas are gaining a central role in development and management.

Chapter Three then reports on methods used in this inquiry. The chapter opens by articulating the research philosophy, that of a critical realist, and discusses how the purpose of the research has informed the research strategy. The chapter is designed to walk the reader through the design framework employed, a case study, and explain the case study selection criteria and the background to the Kokoda Track case study. The final sections of the chapter provide details on the methods of data collection and analysis.

Chapter Four reports on and discusses the findings of this research and is organised into three parts; Part 1: Local Level Management: Customary Landownership of the Track, Part 2: Stakeholders in Regional Management: Tourism on the Track, Part 3: International and National Management Values and Protection.

Part 1 on local level management is presented first, and begins by exploring the findings from the study in relation to customary landownership, legislation and the practicalities of existing land management on the Track. Next, the communities of the Track are discussed, and findings in relation to who the communities of the Track are and how

villages are organised are included. This chapter concludes with an exploration of local level management and presents existing co-management between the communities of the Track.

Part 2 of Chapter Four, Stakeholders in Regional Management: Managing Tourism on the Track, presents empirical findings and discussion of the tourism industry on the Kokoda Track. Tourism provides the context for which regional co-management plays out in this study. Therefore, the generally accepted boundaries of what constitutes the *Track*, as a tourist destination, limit this study (a map of the Kokoda Track as defined in this study is included in Chapter Three). Part 2 begins by presenting stakeholder conceptualisations of the Track to demonstrate the complexities of tourism in this region and the multitude of stakeholders involved. This chapter then presents the empirical findings on the Kokoda Track Management Authority and discusses their role in regional co-management based on employee interviews and perceptions of other stakeholder groups. Following this, is an exploration of sustainable livelihood and philanthropic projects along the Track to highlight the relationships that have been developing between stakeholder groups since the inception of tourism on the Track. Finally, the social effects of tourism on communities of the Track are presented to identify changes in traditional community lifestyles that have consequences for both local and regional management.

The final part of Chapter Four, International and National Management: Values and the Protection of the Track, presents the findings and discussion that centres on the role of the PNG and Australian Governments in co-managing the Track. This chapter details the work of the lead PNG government agency, the Department of Environment and Conservation, and their priorities in terms of natural resource management and protection of the Track. This section also discusses the memorandum of joint understanding between Australia and PNG and specifically discusses Australia's role in managing the Track alongside the PNG Government at the national level. This section also presents future challenges for the national and international management of the Track, particularly in relation to perceptions of local level stakeholders.

The final chapter (Chapter Five) is designed to bring together the three levels of Track management and discuss and interpret existing co-management of the Track in relation

to the literature and the theory of adaptive co-management. This chapter explicitly revisits one theorists approach to co-management; Berkes' (2007a, p. 19) conceptualisations of co-management as a direct response to 'growing demands for a role for users and communities in environmental management'. As discussed at length in Chapter Two, Berkes argues that one can characterise co-management through his conceptualisations in order to better grasp the contextual complexities of co-management in the field of natural resource management. Berkes' conceptualisations have been structured into a mechanism for exploring co-management in this case study, and this thesis ends with a discussion of how this mechanism has implications for the theory and practice of co-management.

1.6 Summary

This chapter began by contextualising the research within the theoretical framework of commons and common pool resource management. The Kokoda Track case study was then introduced and the socio-political context for classifying the Track as a CPR was presented. Consequently, the functionalist worldview adopted assumes that this research considers nature and culture to be inextricably linked and co-management as an approach to natural resource management is presented as a possible pathway to explore how this is relevant in the case study of the Kokoda Track. This chapter then situates the researcher within the research, identifies delimitations and outlines the next four chapters of the thesis.

Chapter Two: Literature Review

The purpose of this chapter is to present literature relevant to the topic of the decentralisation of resource management within global protected areas. Chapter One provided a contextual discussion that found that WHAs could be considered a form of global commons, and a supposition was formed that co-management theory could be used as a framework for exploring the social or human dimensions[4] in natural resource management. This chapter provides the context for these views. In this chapter the evolution of the conservation paradigm that now views the human relationships side of natural resource management as an important determinant of successful biodiversity conservation projects is discussed. This is complimented by an analysis of co-management and a discussion about its relationship to natural resource management, supported by evidence of co-management in practice around the world and particularly recent application in WHAs.

2.1 The Transformation of National Parks: Protected Area Management

> From their inception, protected areas were conceived as areas of land arrogated to the State and managed for the benefit of future generations but to the exclusion of residents. (Colchester 2004, p. 145)

Protected areas[5] and their management have undergone a transformation since their initial inception in the 1800s. Consequently, the role of resource users in protected area

---

[4] Based on the notion that 'human use of natural resources in common pool situations does not inevitably result in a "tragedy"' (Plummer & FitzGibbon 2006, p. 52), the human dimensions of natural resource management are pursued by social scientists and generally focus on the human relationships that guide natural resource management (Berkes & Folke 1998; Natcher, Davis & Hickey 2005). Early works by Pinkerton (1989a) explicitly states the importance of social relationships in co-management. She believes that 'it is important to remember that the successful operation of co-management ultimately rests on the relationships among human actors who are supposedly nurtured by the formal institutions and informal arrangements which make these relationships possible' (Pinkerton 1989b, p. 29) Within environment management literature, social scientists are focusing on how the management of relationships, through an understanding and application of co-management, can help protect natural resources and advocate more ethical conservation (Nursey-Bray 2006). Fundamental to understanding the human dimensions of natural resource management through the application of co-management theory is the notion of the devolution of power and responsibility from the State to local level resource users and consequently the exploration of how this is put into practice in dynamic and contextually specific social-ecological arenas (Armitage, Berkes & Doubleday 2007a).

[5] The term 'protected area' is used in this thesis to encompass all types of designated (by legislation or not) areas of natural or cultural significance e.g. national parks, reserves, etc. A World Heritage Area is effectively a global protected area under legislation of the governing country in which it is situated and

management has significantly changed. The research in this thesis examines the Eurocentric notion (Aplin 2002) that the preservation of wilderness has separated nature and culture (Colchester 1994; Dasmann 1984), and that this provided the initial platform for the management of protected areas. It is suggested that the basis for this separation evolved from the United States' (Phillips 2003) establishment of the first 'national park', Yellowstone National Park (Stevens 1997c). As a consequence, along with the establishment of this park, came the notion that residents need to be relocated from designated lands in order to preserve wilderness (Vodouhe, Coulibaly, Adegbidi & Sinsin 2010; Wells, Brandon & Hannah 1992; West & Brechin 1991).

The application of the Yellowstone model or approach to protected areas meant nations were faced with the task of removing residents (West & Brechin 1991) in order to fence areas, protect wilderness, and designate national parks. Throughout history, acts of coercion and relocation of local residents and resource users from parks and protected areas can be found (Stevens 1997a; Wells, Brandon & Hannah 1992). Subsequently, this model of human relocation for wilderness protection dominated internationally. However, in the last 40 years the social impacts of this model have been questioned and the effects of such disenfranchisement have come to the forefront of international conservation policies (Brechin, Wilshusen, Fortwangler & West 2004; West, Igoe & Brockington 2006).

With research (Brandon, Redford & Sanderson 1998; Colchester 1994) demonstrating major problems created by the exclusion of resource users and local residents into the international spotlight, a range of forums heard the call for change, in international conventions, congresses, associations and key events concerned with the protection of nature and culture together. The introduction of international governance or 'International Conservation Paradigm' as coined by West and Brechin (1991) describes this as a global shift in the management of nature, and consequently, people, in protected areas. The transformation of the traditional notion of a national park, arrogate land removed from society, now has a new model that is attuned more closely to the relationship between nature and culture (West & Brechin 1991; West, Igoe & Brockington 2006). With this transformation came a new paradigm, evoking the change

---

abiding by the conditions of the World Heritage Convention (see section 2.3.1 for more information on World Heritage Areas).

in governance of protected areas, including the variety of an all-encompassing protected area categories and typologies (Phillips 2002).

2.2 Relationship Between Nature and Culture

With a move away from the unilateral presentation of 'wilderness' and the shift towards a socio-cultural conceptualisation of protected areas, there was recognition that an area once declared as wilderness was in fact lived in, and always had been, by indigenous and local residents, and that it is often part of a wider landscape (West, Igoe & Brockington 2006). Culture has the ability to influence protected areas in different capacities throughout the world. In recognition of this, the new paradigm of protected areas paved the way for the inclusion of local residents and resource users in culturally constructed protected area management.

By acknowledging that nature is influenced by culture, a cultural construction of wilderness that separates humans from nature in fact detaches the socio-cultural context of people from their land. Some research suggests that local and indigenous residents do not separate culture from nature (Lockwood & Kothari 2006). For example, indigenous groups such as the Asheninka and the Arakmbut of Peru 'see no duality between nature and culture - all living beings and the physical world are considered part of one's social relations' (Gray 1999 cited in Lockwood & Kothari 2006, p. 44). In addition, communities often 'have emotional and spiritual attachments to their homelands and biocentric values that respect a community of life in them, but also because their own ways of life and identities as peoples are often at stake' (Stevens 1997a, p. 3). While not all local and indigenous residents state their lives are intertwined with land, this recognition of different social and cultural attachments surrounding nature and its use is seen as a paradigm shift (West & Brechin 1991). With this, the task of removing local and indigenous residents from land, that is, essentially detaching socio-cultural aspects of a region for the designation of protected areas, as per the old paradigm, has been re-evaluated.

As the removal and exclusion of local residents in and around protected areas also became ethically unjustifiable (Wells, Brandon & Hannah 1992), governments and organisations working for the protection of nature sought to find ways that conservation

could bring benefit to local residents, often in exchange for their assistance and support in the fundamental goal of conservation. Local residents feel the costs of conservation and protected areas in that their access to natural resources that supported their livelihoods often became restricted or off limits completely (Wells, Brandon & Hannah 1992). It was discovered that development projects could be implemented and tailored to benefit locals and used as a method of exchange for support of conservation goals; Integrated Conservation Development Projects (ICDPs) have become commonplace in negotiations of the establishment and maintenance of protected areas (Lockwood, Worboys & Kothari 2006).

ICDPs became widespread in the 1980s (Baral, Stern & Heinen 2007; Jeanrenaud 2002; Kremen, Merenlender & Murphy 1994; Peters 1998; Wells, Brandon & Hannah 1992), particularly in developing countries. There was a belief that local residents could benefit from development projects and conservation prioritised simultaneously. The recognition of the potential role of locals in the management of protected areas comes at the same time as the push for the establishment of protected areas and national parks to encompass issues such as human needs and local development (Stevens 1997a). Local residents have much to offer protected area managers in their quest for conservation. Recognition of the local and traditional knowledge that locals, particularly indigenous peoples, have developed over thousands of years is inherently valuable to natural resources management. Durning identifies the necessity of local and traditional knowledge in conservation practices:

> It was little appreciated in past centuries of exploitation, but is undeniable now, that the world's dominant cultures cannot sustain the earth's ecological health without the aid of the world's endangered cultures. Biological diversity – of paramount importance both to sustaining viable ecosystems and to improving human existence through scientific advances – is inextricably linked to cultural diversity (1992, p. 7).

A defining point in the new paradigm of protected areas is recognition of local and indigenous residents' relationship with the land, and the valid knowledge and resources these people bring to protected area management. Recognition that this expertise could assist conservation objectives has seen protected area managers reconsider local residents and resource users and their changing role in protected areas.

2.3 Governance of Protected Areas

Inevitably, following an increased understanding of the relationship between local and indigenous residents and their land, comes a discussion on the management and governance of protected areas. 'Managing protected areas is essentially a social process…managers and policy makers must grasp the broader context in which their work is embedded' (Lockwood & Kothari 2006, p. 41). If the management of protected areas is, in fact, a social process as suggested above, then the inclusion of local residents in that process becomes paramount. New terminology and categorisation of protected area management and governance in the last 40 years reflect this change (Phillips 2003).

One of the first efforts to clarify the terminology surrounding protected areas was made in 1933 by the International Convention for the Protection of Fauna and Flora where Holdgate (1999) articulates that four categories of protected areas were established: 'national park, strict nature reserve, fauna and flora reserve and reserve with prohibitions for hunting and collecting' (Dudley 2009, p. 3). Following this, in 1942 the Western Hemisphere Convention on Nature Protection and Wildlife Preservation also outlined four categories of protected areas: 'national park, national reserve, nature monument and strict wilderness reserve' (Dudley 2009, p. 3). It wasn't, however, until much later that century that further research was undertaken and a framework was developed for nations to use in the designation of protected areas. It was the introduction of the International Union for the Protection of Nature in 1948, which in 1956 changed its name to the International Union for Conservation of Nature and Natural Resources (IUCN) that led to this change.

The formation of the IUCN was a turning point in the approach to management and governance of protected areas and their relationship with local residents. In 1972, at the Second World Parks Conference, the IUCN was called to: 'define the various purposes for which protected areas are set aside; and develop suitable standards and nomenclature for such areas' (Elliot 1974 cited in Dudley 2009, p. 4). The IUCN was charged with classifying protected area management terminology, consequently introducing their protected area categories, which were revised in 1994 and are widely used today. These were applicable to all nations in their fight for biodiversity protection. Table 1 is the list of original and revised categories of the IUCN protected areas.

Table 1: IUCN Categories of Protected Areas

1978 Categories of Protected Areas	1994 Categories of Protected Areas
Group A: Categories for which Commission on National Parks and Protected Areas (CNPPA) will take special responsibility I Scientific reserve II National park III Natural monument/national landmark IV Nature conservation reserve V Protected landscape Group B: Other categories of importance to IUCN, but not exclusively in the scope of CNPPA VI Resource reserve VII Anthropological reserve VIII Multiple-use management area Group C: Categories that are part of international programmes IX Biosphere reserve X World Heritage site (natural)	I Strict protection [Ia) Strict nature reserve and Ib) Wilderness area] II Ecosystem conservation and protection (i.e., National park) III Conservation of natural features (i.e., Natural monument) IV Conservation through active management (i.e., Habitat/species management area) V Landscape/seascape conservation and recreation (i.e.,Protected landscape/seascape) VI Sustainable use of natural resources (i.e., Managed resource protected area)

Source: (Dudley 2009, p. 4)

These categories provide an operational framework for nations in their pursuit of conservation objectives. The 1994 revised version of these categories demonstrates how the thinking of protected areas has changed; this version facilitated change, providing local residents with a platform for involvement in land management. Specifically, categories V and VI create space for the involvement of locals in decision-making (Dudley 2009).

More recently, the discourse surrounding protected area management has moved broadly into a discussion of governance. Although some scholars used the terms management and governance interchangeably in the literature surrounding protected areas and natural resource management, it is important to note that they hold different meanings and are often context specific. Borrini-Feyerabend, Johnston and Pansky state that governance in protected areas is defined as:

> Governance is about power, relationships, responsibility and accountability. It is about who has influence, who decides and how decision makers are held accountable (2006, p. 116).

This definition problematises what was once the role of the government in designating protected areas, and starts legitimising the role of other stakeholders in the decision-making process, because in some places around the world, land use decisions are not the sole jurisdiction of national governments. Nkhata and Breen (2010) present governance as the government's interactions with society; governance is now more than the political power of governments (Borrini-Feyerabend, Johnston & Pansky 2006). Protected area governance is transforming into a multi-faceted, multi-stakeholder task, of which the organisation of management is one of these tasks. Therefore, in this thesis, the following definitions are adopted:

> Governance is viewed as a social process that is used by society to guide the relationships between protected area agency and its constituencies as they go about articulating their interests, exercising their rights, meeting their social obligations, and mediating their differences. (Nkhata & Breen 2010, p. 404)

> The crux of management…is to implement actions that promote or discourage specific forms of social and ecological transformations in the context of public interest defined for a protected area. (Nkhata & Breen 2010, p. 405)

The authors of these definitions highlight the relationship between governance and management and how they are inextricably linked in the literature and practice surrounding protected areas. Ideally, the development of protected areas governance will help guide the appropriate organisation of protected area management. However, the struggle of stakeholder involvement in governance and management continues, particularly with the recognition of local and indigenous residents and resource users.

In the continuing attempt to clarify and articulate the changing nature of protected areas on a global scale, four typologies for protected area governance were developed at the Fifth World Parks Congress in 2003. These are:

1. government protected areas (government agencies at various levels make and enforce decisions);
2. co-managed protected areas (various actors together make and enforce decisions);

3. private protected areas (private landowners make and enforce decisions); and
4. community conserved areas (CCAs) (indigenous peoples or local communities make and enforce decisions). (Borrini-Feyerabend, Johnston & Pansky 2006, p. 118)

Under these typologies, the role of local residents and resource users within these identified governance structures is precise and clear. Within the latter three typologies, local community-level stakeholders have an opportunity to play a variety of roles within protected area governance (See Borrini-Feyerabend, Johnston & Pansky [2006] for case study examples of these types of governance typologies). However it is important to understand how these typologies are put into practice and how local level stakeholders are encouraged to participate.

The role of local residents and resource users in the new paradigm of protected areas becomes more transparent using Phillips (2003) interpretation. Although somewhat colloquial, Phillip's compelling argument provides an insightful summary of the transformation of the protected area paradigm. Comparing the 'old' versus the 'new', Phillips demonstrates how the components of protected area management have reformed, widening in overall scope and paving the way for the involvement of locals in many aspects of management. Table 2 overleaf is an adaptation of Phillips' (2002, 2003) key points.

Table 2: Characteristics of Protected Areas

	Old	**New**
Objectives	Set aside for strict conservation and established mainly for wildlife and scenic protection. Often valued as wilderness and created mainly for tourists and visitors	Established for scientific, economic, and cultural reasons. Often managed with social and economic objectives alongside conservation and regions are valued for the cultural importance of so-called wilderness
Governance	Run by central or federal governments	Run by multiple stakeholders and partners, including local and provincial governments, NGOs and local communities
Local communities	Disenfranchised and even relocated from their land	Run with and for, and in some cases by, local people and often to meet the needs of local livelihoods
Wider context	Developed separately and looked at as 'islands'	Planned as part of national, regional and international systems and developed as 'networks' which include strict preservation areas linked by green corridors and buffer zones
Perceptions	Viewed primarily as a national asset and only as a national concern	Viewed also as a community asset and an international concern
Management skills	Managed by scientists and natural resource experts – focus on expert led	Managed by multi-skilled individuals and draws on local and indigenous knowledge. Sometimes community led

Source: (Phillips 2002, 2003)

Theoretically, the research and evidence supporting the transformation of protected area management, including the categories and governance styles presented in this section, demonstrate a compelling case that justifies the genuine inclusion of local residents in decision-making surrounding protected areas. No longer can 'the definition and categories of protected areas … be used as an excuse for dispossessing people of their land' (Dudley 2009, p. 10), as it was many years ago. Protected areas must be governed in a way that acknowledges the needs and rights of local residents and resource users (Lockwood, Worboys & Kothari 2006). The challenge is to find innovative ways to integrate local residents and resource users, often non-homogenous groups, into the planning process of protected areas and their management.

In order to better understand the practical implications of including local residents and resources users in global protected area management, the focus for this thesis will be

World Heritage Areas (WHAs). Literature on WHAs is made up of contemporary empirical research, along with the governing organisation's publications on managing these global protected areas. In addition, WHAs and their global status produce a wider variety of legitimate stakeholders than other protected areas, each with differing goals and motivations. In a discussion of global protected areas such as this, understanding how these changes have influenced the nature and practice of World Heritage will be explored next.

2.4 World Heritage Areas

With the rise of protected areas and international conservation policies, this section will introduce the concept of World Heritage. Similar to the transformation of protected area management, ideas surrounding World Heritage Areas are now evoking a sense of participatory protection of the world's natural resources. Similar to the evolution of protected areas, the implementation of the World Heritage Convention ('the Convention' as it is referred to from here) has adapted and transformed since its inception. The uptake and implementation of the Convention has grown extensively and the approach is being redefined, particularly with a recent focus on community involvement (Kaldun 2003). In this section, an overview of the World Heritage is provided, followed with a discussion of the evolution of World Heritage with particular focus on the legitimisation of locals and how their changing involvement in site organisation has influenced the practice of World Heritage designation.

2.4.1 The World Heritage Convention

> In creating World Heritage, the Convention also creates, in many ways, a world without borders. As a highly organised global response to the myriad of local challenges facing the world's heritage, the Convention forms part of the new architecture of global governance. (Pannell 2006, p. 76)

The 1972 Convention concerning the Protection of the World Cultural and Natural Heritage ('the Convention') developed from the merging of two separate movements: the first focusing on the preservation of cultural sites, and the other dealing with the conservation of nature (UNESCO 2011b). It was identified that, due to lack of resources, heritage often fails to be prioritised, particularly by developing countries, as

its preservation is particularly resource intensive (UNESCO 2011b). Therefore, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) constructed an intergovernmental body, the World Heritage Committee (WHC), to ensure the appropriate management and implementation of the Convention. Once the Committee was formed, this led to the designation of sites, stretching the globe, that represent universal heritage. What sets this Convention apart from others is that 'the World Heritage Convention is the only international convention that protects both natural and cultural properties' (Pedersen 2007, p. 115). The Convention and the WHL have been considered 'a collective international effort to safeguard our planet from destruction, similar to the efforts with respect to the global environment. It can be considered to be a kind of applied global ethics' (Frey & Steiner 2011, p. 558).

World Heritage is the designation for places on earth that are of outstanding universal value to humanity and as such, have been inscribed on the WHL to be protected for future generations to appreciate and enjoy. Places as diverse and unique as the Pyramids of Egypt, the Great Barrier Reef in Australia, Galapagos Islands in Ecuador, the Taj Mahal in India, the Grand Canyon in the USA, or the Acropolis in Greece are examples of the 962 natural and cultural places inscribed on the World Heritage List to date (UNESCO 2013b).

As the listing of WHAs has increased, and scholarship on the nature of protected areas has evolved, so has the practice of World Heritage. The important changes in the way in which World Heritage is practiced will be explored next, specifically focusing on the changing patterns in the practice of World Heritage.

2.4.1.1 Evolution of World Heritage

Over the last 39 years, the Convention has evolved with 19 revised versions of their Operational Guidelines (UNESCO 2010f) indicating the implementation of the Convention has been redefined. Manuals published on the management of WHAs have been in circulation for the last two decades (ICOMOS 1993; Pedersen 2002) to assist site managers with operational issues. These manuals are geared to WHA managers and designed to assist with dealing with the effects and impacts of such a global accolade. In 2011, the first ever manual, 'Preparing World Heritage Nominations 2010' was

released, focusing on assisting countries in the preparation phases of World Heritage nomination (UNESCO, WHC, ICCROM, ICOMOS & IUCN 2011). With programs, conferences and abundant manuals and handbooks produced by Convention, there is evidence that the way in which natural and cultural heritage is protected around the world has been redefined (Di Giovine 2009; Rossler 2006).

Changes in the Convention's international programs demonstrate how the Convention has adapted to contend with the environmental challenges and societal shifts throughout the 21st Century. Firstly, the formation in 1994 of the Global Strategy was a key turning point for the Convention; the challenge was to rectify the recognised imbalance of the WHAs from developed, European countries versus very few from underdeveloped regions (Strasser 2002; UNESCO 2013a). Since 1978 when the first site was listed, developed nations were first to join the Convention, allocating resources to the preservation of their State Parties' historical buildings and predominately natural sites. This discovery meant developing countries, financially unable to ratify the Convention and allocate funding for heritage conservation, were underrepresented on the World Heritage List and consequently, a lack of diverse cultural sites were inscribed (World Heritage Committee 1994).

To rectify this, recognition of the importance of cultural heritage has brought about new programs and initiatives from the Convention (Shackley 1998). Items such as the 'Cultural Landscapes' category was added to the World Heritage List (Shackley 1998). Furthermore, the Convention adopted the Convention for the Safeguarding of Intangible Cultural Heritage in 2003 that aims to preserve heritage in the form of traditional folk dancing, indigenous ceremonies and ancient languages from around the globe (UNESCO 2010a). These programs reflect the change in international politics; that is, the acceptance that conservation of natural resources is of equal importance to the preservation of cultural heritage.

Management styles have been reconceptualised and global organisations such as the Convention and UNESCO, where local residents' and resource users' now have a legitimised role to play in World Heritage (Edroma 2004; Leask & Fyall 2006). This parallels the transformation of protected areas and the changing role of local residents and resources users in global management. In particular, a conference entitled, *Linking*

Universal and Local Values for the Sustainable Management of World Heritage organized by the Netherlands National Commission for UNESCO in 2003, identified that the role of locals in WHAs needs further exploration. Papers from this industry-based conference demonstrate how local residents and resource users can be partners in the management of WHAs. Kaldun argues:

> Not only does sustainable development of the heritage mean local action, but cultural heritage conservation itself depends on the commitment and involvement of local communities. Policy-makers as well as heritage professionals are faced with the challenge of recognizing that for conservation to be implemented effectively and in a socially acceptable way, the populations living in or near heritage sites must be given a leading role in the development of policy, as well as the management of the heritage sites (2003, p. 115).

With this changing scope of World Heritage, particularly in the cultural domain, and the changing nature of protected area management (discussed in 2.3), the designation of global protected areas is being reformed. The justification and nomination of a site for designation, once considered the role of the government or State, is now morphing into a combined effort from multiple stakeholders (Rao 2010). The legitimisation of local stakeholders, often intimately affected by the designation of a WHA, has resulted in their increased involvement (Harrison & Hitchcock 2005). This issue will be discussed in more detail in the next section and examples of how local residents and resource users are involved in management and protection of WHAs across the globe will be presented.

2.4.2 Literature on World Heritage Areas

Academic research on World Heritage is most often studied post-implementation (after the World Heritage Site is designated e.g. the cases of the Solomon Islands and Vanuatu) with case studies attempting to highlight often disastrous effects of World Heritage status including poor environmental protection, cultural commodification and disruption to the hosts. A breakdown by country of case studies on WHAs is presented in Table 3 overleaf. The purpose of including these examples is to contribute to the discussion on local residents and resource users and highlight their involvement in global protected areas specifically presented in the literature.

Table 3: World Heritage Literature Summary

Relevance to this research	Country	World Heritage Site	Author	Findings
Communities recognised as key stakeholders	Japan	Ogimachi	(Jimura 2010)	• Disruption of sense of community • Positive economic benefits of tourism • Decreased preservation
Twinning of heritage management and tourism development	China	28 World Heritage Sites in China	(Li, Wu & Cai 2008)	• Protection of heritage versus serving the tourism industry • Main challenges are population pressures, development policies of local government and financial support
Community involvement in heritage and tourism development	Cambodia	Angkor Archaeological Park	(Winter 2005)	• Ancient socio-cultural construct of heritage for international tourists disregards contemporary domestic use of heritage • Commodification of culture
Community participation in development	Mexico	Mundo Maya	(Evans 2005)	• Lack of local community involvement in heritage management • Commodification of culture
World Heritage knowledge, protected area management	USA	Yellowstone National Park	(Williams 2005)	• Ignorance of what the World Heritage Convention is • Lack of effort from the State Party to continue to protect heritage products
Protected area management and capacity building	Lebanon	Ouadi Qadisha and the Forests of the Cedars of God	(Shackley 2005)	• World Heritage versus national nature reserve conservation efforts • Commodification of nature
Community participation in development	St Lucia	Pitons Management Area	(Nicholas, Thapa & Ko 2009)	• Lack of involvement from residents affected sustainability of the region
Collaboration from local to global level	Indonesia	Borobudur and Prambaban	(Wall & Black 2005)	• Disconnect between local and global heritage values • 'Top-down approach' to policy implementation displacing human activity
Barriers to community participation	Australia	Great Barrier Reef	(Nursey-Bray & Rist 2008)	• Lack of space in World Heritage political framework for the inclusion of indigenous communities input

Analysing the summary of the World Heritage Literature presented in Table 3 it is apparent that the role of local residents and resource users is lacking and undefined. It is argued that this has the potential to cause conflict between the quest for conservation and the day-to-day lives of the hosts. What is not known in these cases is to what degree these local residents were considered in the initial design and nomination phases of WHA designation. Until research is conducted on potential WHAs (that is, pre-inscription on the WHL) and the organisation of locals and other stakeholders for protected area governance and management, identifying and mitigating these issues will remain a diagnostic experiment, thus leaving local residents and resources users the unwitting recipients of decisions made by governments and policy makers.

A study that is explicitly focused on a case study site pre-inscription is the Proposed Pimachiowin Aki World Heritage Project in Canada. In this research, Lemelin and Bennett (2010) explore the processes that will be required in order to combine existing protected areas in Canada, with lands of First Nations. Specifically, these authors identify the need to foster community-based and participatory approaches to protected area management that will help the Canadian government agencies to develop innovative ways of incorporating traditional and western knowledge systems. Lemelin and Bennett also suggest that:

> Because of the UNESCO recognition of indigenous rights, traditional management mechanisms and customary law, 'world heritage' is an attractive designation for protected areas with indigenous involvement. (2010, p. 183)

Compounding this, these authors argue that local residents and resource users, particularly ones with traditional use rights are more than just another 'interest group' to consider (Lemelin & Bennett 2010). These stakeholders should take a central role in the process of protection and management of protected area gazettal. However, as these authors rightly point out, land rights are often still ambiguous and issues of genuine ownership, access and management still remain barriers to participation.

Recently, other scholars have taken up issues of local resident and resource users involvement and suggest that, like Lemelin and Bennett (2010) believe, World Heritage is an appropriate sphere to explore a rights-based approach to conservation. Additions to the body of knowledge on World Heritage have focused on defining the role, by

outlining the rights of local indigenous residents in WHAs (Hales, Rynne, Howlett, Devine & Hauser 2013; Oviedo & Puschkarsky 2012; Ween 2012). These authors are advocating a rights-based approach to World Heritage, where self-determination of local residents and resource users should be a major focus in the process of World Heritage nomination (Hales et al. 2013). Hales and colleagues (2013) advocate specifically that free prior informed consent, in accordance with the United Nations Declaration on the Rights of Indigenous Peoples, is closely aligned with the philosophy of participatory approaches to conservation management and should be included formally in the process of nominating WHAs. Ween (2012) proclaims that by not using a rights-based approach to World Heritage, the designation of WHAs legitimises the removal of residents (as per the old paradigm of protected areas) and requires the surrendering of self-determination and restricted lifestyles for indigenous peoples.

Oviedo and Puschkarsky (2012, p. 286) conclude that the adoption of a co-management approach, where a rights-based approach informs 'the work of international instruments such as the World Heritage Convention', is a possible solution to the problem of how to incorporate the rights of local residents and resource users in WHA designation. They suggest community land rights be secured and an understanding of how dependency on these rights and the land manifests within the communities. In addition, they believe that 'rights-conservation links are shaped by the systems of governance in which they are embedded, and the cultural, historical, political, socio-economic and ecological contexts in which they occur' (2012, p. 292). Therefore, improving governance, which is at the essence of a rights-based approach to conservation, should include co-management approaches to encourage participation and generally improve the involvement of local residents and resource users who are most effected by World Heritage designation (Cullen-Unsworth, Hill, Butler & Wallace 2012; Hill 2011; Oviedo & Puschkarsky 2012). Moreover, there is an argument that due to the highly visible nature of WHAs, these sites should be leading by example in testing the innovative rights-based approach to governance that other conservation initiatives can learn from (Oviedo & Puschkarsky 2012).

How do those charged with World Heritage management engage with local residents and resource users in the design of protected area governance and management? How does the management of global commons attempt to deal with the viewpoints of

multiple stakeholders and resource users? The protected area literature offers up several management options, such as the four typologies of governance presented in Section 2.2. In particular the idea of co-management is of importance to a study focusing on managing stakeholder and local resident involvement in WHAs. While the protected area literature introduces and discusses the implications of co-managed areas (Borrini-Feyerabend, Johnston & Pansky 2006; Kothari 2006), there is little evidence of any practical tools that can be used in researching and implementing co-management within the complex legislative framework of World Heritage. Therefore, the literature in natural resource management is examined to help provide a deeper understanding and wider application of the concept of co-management and participation of local residents and resource users in a global policy environment.

In response to the challenges facing governments and conservationists, such as the involvement of and the interaction with local residents and resource users in protected areas, is the adoption of a co-management arrangement (Nursey-Bray & Rist 2008).

> Co-management as a model affords indigenous and local peoples the right to collaboratively work together for a common goal, and achieve varying levels of community participation. Co-management also has the potential to achieve both biodiversity and cultural outcomes' (Nursey-Bray & Rist 2008, p. 118).

The argument put forward by these authors is explored next, as the contribution of co-management could provide valuable insights into the future management approach of WHAs.

2.5 Co-management

Sneed (1997, p. 154) highlights that the designation of protected areas almost always meant the nationalisation of lands, essentially removing 'community-based common property rights, institutions, and resource management regimes'. Furthermore:

> Natural resources whose use was previously regulated by well-established community management systems thus became 'public resources' without specific access and use rights…this is the real 'tragedy of the commons', which often results in the destruction of natural resources in parklands, and it has led to the various proposals for recreating common property rights either through emphasis on community-based management or co-management with the state…clearly co-management holds much promise for integrating the interests of indigenous

> peoples with the national needs for protected areas in a way that will ensure continuing conservation of natural and cultural diversity. (Sneed 1997, p. 154)

According to Sneed, co-management arrangements are being proposed as one solution to the management of the commons. In addition to this proposition, Moeliono argues that:

> Although the way natural resources are controlled by the state is much criticized, ultimately the government must be responsible for conservation. After all, isn't the state created in order to protected the common good and prevent the 'tragedy of the commons' of certain groups gaining disproportionate benefits at the expense of others? However, the government is clearly not able to do this alone (2008, p. 168).

These authors discuss the proposition of co-management as a solution to Hardin's Tragedy of the Commons. Authors believe common property theory provides the foundation for co-management (Armitage, Berkes & Doubleday 2007a; Berkes, Mahon & McConney 2001; Pinkerton 1989a). Well established in the literature of natural resource management, co-management is particularly prevalent regarding the management of fisheries (Armitage, Berkes & Doubleday 2007b; Berkes 2008; Carlsson & Berkes 2005; Dale 1989; McConney, Mahon & Pomeroy 2007; Natcher, Davis & Hickey 2005; Pinkerton 1989a; Pomeroy & Berkes 1997), forests and wildlife management (Kofinas 2005; Pinkerton et al. 2008; Sneed 1997) and has had limited application in WHAs (George, Innes & Ross 2004; Hill et al. 2011; Lemelin & Bennett 2010; Nursey-Bray & Rist 2008; Ross, Innes, George & Gorman 2004). This section provides the definition and conventional understanding of the theory of co-management, providing case study examples as well as highlighting recent conceptualisations of co-management and how it has morphed into a new form - adaptive co-management. It is the principles and approaches of adaptive co-management that inform the research framework of this study.

2.5.1 Defining Co-management

Schultz, Duit and Folke (2010) discuss the growing trend of increasing participation levels, specifically of resource users, as a contributor to efficiency in natural resource management. In concert, resource users have been demanding a role in decision-making for some time, particularly when the decision can affect their livelihoods (Berkes 2007a). In response to the demands from resource users to have greater involvement in

environmental and resource management, 'co-management arrangements serve to democratise decisions-making, foster conflict resolution, and encourage stakeholder participation' (Armitage, Berkes & Doubleday 2007b, p. 3). However, defining the characteristics and principles of co-management and articulating the levels of participation have taken some decades to define (Armitage, Berkes & Doubleday 2007a).

One of the first attempts to theorise co-management of natural resources was made by Pinkerton in the 1980s (Plummer & Armitage 2007c). Pinkerton edited a book on co-management and its role in fisheries management in North America in an attempt to develop a theory of co-management (Pinkerton 1989b). At the time of writing, Pinkerton acknowledged few attempts of official (as in legislated) co-management arrangements within fisheries existed, and those few that did are detailed in her book. Using existing theories from 'marine anthropologists, cultural ecologists, common property theorists, institutional economists, public policy analysts, political economists and social psychologists', Pinkerton (1989b, p. 6) discusses co-management and offers case study examples to demonstrate models that advance an understanding of how co-management can be conceptualised and realised in the quest for effective natural resource management.

More recently, Armitage and colleagues (2007b) point out that defining co-management is difficult as there is a continuum of co-management arrangements, often defined by the levels of power-sharing between participants. In addition to the problem of an accepted definition, the nomenclature of co-management arrangements within the protected area and natural resource management literature differ. Terms include joint management, collaborative management, cooperative management and co-management. Often authors will use these terms interchangeably, or select one based on their perceived understanding of its meaning and relevance to a specific case (George, Innes & Ross 2004). The issue with using the terms interchangeably is that their meanings are subjective, and hence mean different things to different people. However, as Armitage and colleagues suggest, definitions generally centre around a discussion of possible degrees of power sharing between the resource users and the government; and hence these two stakeholders must be involved to classify for co-management (Borrini-

Feyerabend & Jaireth 2004). Several definitions have been presented, some of which include:

- Co-management is the 'sharing of power and responsibility between the government and local resource users' (Berkes, George & Preston 1991, p. 91)
- Co-management or collaborative management is 'about negotiated agreements and other legal or informal arrangements...between groups or communities of fishermen and various levels of government responsible for fisheries management' (Pinkerton 1989b, p. 4)
- Co-management, joint management, collaborative management and multi-stakeholder management being used synonymously 'where decision-making power is shared between state agencies and other partners, including indigenous people and local communities, and/or NGOs and individuals or private sector institutions' (Kothari 2006, p. 528)

Kothari (2006) goes one step further than simply defining co-management as power sharing of protected areas; he articulates that collaboratively managed protected areas have clearly laid out institutional structures, are situations of social engagement and have predefined rules of partnerships. Collaboratively managed protected areas 'are an interesting arena for learning and change, provided that flexibility and adaptation are maintained by the partners', whereby the partners 'capitalize on multiplicity and diversity' (Kothari 2006, p. 529).

Some research attributes the development and constant redefinition of co-management to the desire to share rights and power between government and civil society and is used as a formal management strategy linking these two resource user groups (Armitage, Berkes & Doubleday 2007b). However, the interpretation of co-management and its defining characteristics is divergent and highly context specific. Examples of co-management in practice can be found across the globe including North America (Pinkerton 1989a; Sneed 1997), India (Agrawal & Chhatre 2006), Nepal (Stevens 1997b), South Africa (Reid, Fig, Magome & Leader-Williams 2004) and Australia (Furze, Lacy & Birckhead 1996). Many of these will be discussed later in this section to highlight the contextualised nature of co-management arrangements.

A widely accepted component of co-management in natural resource management is the necessity to treat and manage social relationships as if they are of equal importance to the ecological components of a region. Researchers have written extensively on linking the social-ecological aspects in order to better mediate relationships between people and the environment. Particularly, Folke and colleagues (Folke, Carpenter, Elmqvist, Gunderson, Holling & Walker 2002, p. 437) highlight two fundamental errors in the management of social-ecological systems, (1) 'the implicit assumption that ecosystems responses to human use are linear, predictable and controllable' and (2) 'the assumption that human and natural systems can be treated independently'. Folke and colleagues articulate social and ecological systems are in fact linked. More recent evidence suggests that humans and ecosystems are inseparably linked (Armitage, Berkes & Doubleday 2007b).

Due to the debated definitions, highly context specific nature and potentially diverse social relationships present in co-management arrangements, a long-standing scholar in the field has attempted to classify and categorise co-management. Berkes' (2007a) conceptualisations of co-management aid understanding of the numerous ways in which the relational aspects of co-management can be organised. In this thesis, the focus is on the organisation of social relationships in co-management arrangements.

2.5.2 Conceptualising of Co-management

Berkes (2007a, p. 19) discusses how the term co-management has been used as a 'catch-all' phrase to describe a myriad of collaborative management arrangements. However, he shows that each co-management arrangement is dealing with a different set of dynamic context specific variables and stakeholders. Berkes (2007a, p. 23) refers to the differences in definitions of co-management by referring to them as *faces of co-management*. These include:

> co-management as power sharing; co-management as institution building; co-management trust and social capital; co-management as a process; co-management as social learning; co-management as problem solving; co-management as governance. (Berkes 2007a, p. 23)

Adding to this in a more recent study, Berkes specifically addresses the role of *co-management as social learning* and adds *co-management as knowledge generation*, highlighting issues of learning and knowledge become key to the evolution of co-management (Berkes 2008, p. 1694). It is through these lenses, by which he articulates there can be many more *faces of co-management* (Berkes 2008), that the diversity of co-management relationships is explored.

Berkes' (2008) conceptualises co-management as:

> …power sharing;
> …institutional building;
> …trust and social capital;
> …a process;
> …problem solving;
> …governance;
> …knowledge generation;
> …social learning.

Starting with power sharing, this section will be structured to define each lens and identify research that fits within that lens. Following that, a table of examples will be presented to demonstrate the application of the *faces of co-management* in practice.

2.5.2.1 Power-sharing

The nature of power sharing often causes conflict between partnerships (Berkes 2007a), especially in a multi stakeholder environment such as a protected area. As identified in the definitions of co-management, the participants involved in such arrangements generally include governments and local resource users. Often, governments are charged with managing resources, though, the existence of community managed areas is becoming more prevalent (Borrini-Feyerabend, Johnston & Pansky 2006; Kothari 2006). The aim of several of these community-managed areas is to devolve the power from the governments, and give resources users control over access and management of their resources, which their livelihood often depends on. Therefore, a level of shared decision-making and power-sharing becomes important in a discussion of access to resources and establishing co-management.

The degree of shared decision-making varies extensively and is often dictated by the level of existing legislation. In rare instances, resource users have the majority of power and control in decision-making such as areas under customary landownership. In these cases, resources users have the central control over harvesting, forest management and general resource use. However, in most circumstances, particularly where protected areas have been established, resource users hold less power in decision-making and often feel the effects of such decisions more severely than other partners in co-management. Therefore, when dealing with co-management arrangements that often affect the livelihoods of resource users, the level of power becomes an increasingly difficult balance to maintain.

2.5.2.2 Institutional Building

The idea of institution building within a co-management arrangement appears fundamental to the organisation of people and resources. If co-management is to succeed, then there needs to be a favourable policy environment to assist in the operationalisation of co-management arrangements (Berkes 2008). Berkes (2008) articulates that the establishment of some co-management arrangements deliberately create new institutions. However, in other situations, existing well-established institutions take on the co-management role. Regardless of how the institution is established, there is a need for a central body to guide the co-management arrangement.

Institutions charged with the role of co-management are responsible for the coordination of multiple stakeholders with the common goal of successful management of the social-ecological systems. Singleton (2000) articulates that the discussion should focus on the capabilities of the state and the resource users, and importantly, how institutions can affect the collaboration between these two groups. In response to the need for institutional organisation, bridging organisation is a term introduced by Folke and colleagues (2005) as a way of describing the co-management institution. These authors highlight that leadership from the bridging organisation or institution is fundamental in the establishment and development of co-management arrangements.

2.5.2.3 Trust and Social Capital

How trust is built and social capital is gained is case dependent (Berkes 2008). Trust building is described as essential, even as a universal determinant of successful co-management; trust and respect are the foundation of partnerships (Berkes 2007a). It is believed that trust building is a fundamental component of building social capital in order to solve problems collaboratively (Pretty & Ward 2001). In order to encourage collaboration between two parties, potentially with a negative relational history, the importance of trust building is paramount and should be a main focus in the initial stages of establishing co-management arrangements (Chuenpagdee & Jentoft 2007).

2.5.2.4 A Process

'Co-management presupposes that parties have, in a formal or semi-formal way, agreed on a process for sharing management rights and responsibilities' (Berkes 2008, p. 1694). The idea that co-management is in fact a process is supported by Chuenpagdee and Jentoft (2007), who articulate the path dependency of co-management and describe it as a long and winding road. Conceptualising co-management as a process has been applied in the interpretation of the implementation of a collaborative arrangement. In some studies, the efforts to establish co-management arrangements have taken several years, resulting in co-management being defined as the constant development and redevelopment of relationships. Berkes (2007a, p. 27) discusses how co-management arrangements are contextual, negotiated and develop over time; 'co-management is often the result of extensive deliberation and negotiation – a process rather than a fixed state'. With this in mind, determining the length of time needed to establish co-management is highly dependent on the relationships between stakeholders, and the constant effort to develop and evolve these relationships.

2.5.2.5 Problem-solving

Carlsson and Berkes (2005) focus their discussion of co-management around functional decisions to be made and problems to be solved; the overall problem oriented approach, rather than simply a formalised process of power-sharing. With this in mind, power sharing becomes the result of a process rather than the starting point for co-management arrangements (as outlined in section 2.5.2.4). (Carlsson & Berkes 2005). Co-

management as problem-solving is focused on the collaborative efforts of stakeholders to generate alternative solutions to a common problem (Berkes 2008). Carlsson and Berkes concur in their paper, that treating co-management as problem solving requires the collaboration of stakeholders to identify problems, and work towards solutions in a task orientated way.

2.5.2.6 Governance

Governance traditionally has fallen within the domain of central governments. Though, as discussed earlier in this chapter, the evolution of new people-centred approaches to protected areas paves the way for the inclusion of local resource users in new models of governance. In recent times, 'the normative position of many in the co-management literature is that the direct involvement of people in resource management decisions that affect their livelihoods is good governance' (Berkes 2008, p. 1694). Therefore, co-management as a form of governance has decentralised power in many circumstances and is used to define the responsibility and accountability of decision-making (Borrini-Feyerabend, Johnston & Pansky 2006).

Berkes articulates that through co-management as a form of governance, multiple stakeholders from public and private sectors can be included. Often multiple levels, from the local to the national, and multiple links also play a part in the polycentric approach (Berkes 2008). With a variety of actors from multiple sectors involved, the conceptualisation of co-management as governance creates space for the inclusion of local residents and resource users in decision-making.

2.5.2.7 Knowledge Generation

Social-ecological systems are complex to manage due to their dynamic nature (Berkes & Folke 1998). As a result, Berkes (2008) suggests there is value in generating knowledge to aid the management of these ever-changing arenas from multiple levels, including and targeting the local knowledge based within a social-ecological system. In protected area management, there is also now a situation where local and indigenous knowledge is seen to be of equal value to scientific and expert knowledge (Sneed 1997). The value of indigenous knowledge has been heralded by some as invaluable to the

management of natural resources, yet the practice of gaining this knowledge has been difficult (Berkes 2008). Several studies within natural resource management and protected area management have researched ways to bridge the knowledge between science and traditional resource uses (Berkes, Reid, Wilbanks & Capistrano 2006; Reid 2006).

Knowledge generation, or the co-production of knowledge from multiple stakeholders begins to delve into the framework of adaptive management (Berkes 2008). As the number of stakeholders increase in co-management, issues of flexibility and dynamism come into play (Armitage, Berkes & Doubleday 2007a). Hollings introduced the theory of adaptive management in 1978. Adaptive management refers to an iterative approach, with multiple stakeholder interactions both vertically and horizontally (Armitage, Berkes & Doubleday 2007b), designed to use the learning-by-doing approach to gain support among stakeholders.

In addition to knowledge generation, social learning is also a component of adaptive management and is identified as the final face of co-management (Berkes 2008). This is the final key contributor to this discussion on the evolution of co-management.

2.5.2.8 Social Learning

The idea of co-management as a social learning process is explored by Berkes (2008) as an additional *face of co-management* and one that is also key in linking the concepts of adaptive management and co-management. According to Berkes (2008, p. 1696), within the education literature, the 'classic model refers to the process of individual learning based on observation and imitation. With iterative feedback between the learner and the environment, the learner changes the environment and these changes in turn affect the learner'. Berkes is suggesting that learning at the group level, not individual levels as conventional learning theories suggest, is a better method to apply to natural resource management. Berkes' proposition is echoed by Keen and Mahanty (2006). In fact, acknowledging that learning occurs across multiple institutional levels and in different group settings is a more appropriate way of applying the concept of social learning to a co-management arrangement (Berkes 2008) .

Armitage, Marschke and Plummer (2008) agree with Berkes (2008) noting that social learning is an appropriate concept to explore within the context of co-management. Within environmental management, applying the concept of social learning, particularly learning-by-doing (Holling 1978) and learning as participation (Wenger 1998), co-management transforms into a holistic approach to management, more than simply a governance or power sharing structure. Thinking of co-management as social learning implies that through the process of co-management, stakeholders will gain insights to their problems and new problems, and that problem solving will be achieved collaboratively.

To help illustrate the conceptualisations of co-management, Table 4 overleaf consists of examples of co-management arrangements from around the world. The examples in this table are not prescriptions for the successful implementation of a co-management arrangement. In fact, in most of the case examples, negative issues surrounding co-management were identified and discussed. The purpose of highlighting these examples is to further Berkes' conceptualisations of co-management and demonstrate their relevance within existing empirical enquiry. Additionally, the table facilitates an understanding of the subjective nature of co-management and demonstrates the operationalisation of Berkes' *faces of co-management* to better understand the complex and diverse nature of co-management arrangements.

Table 4: Faces of Co-management Examples

Faces of Co-management	Case Example	Author	Resource Type	Evidence	Alternative Conceptualisations
Power-sharing	Wrangell-St Elias National Park, USA and Kluane National Park Reserve, Canada	(Sneed 1997)	National park	• Devolution of some power from government agencies to resource owners • Coverage of park management jurisdiction is shared to an extent • Local knowledge incorporated in park management regimes	Co-management as governance
Governance	Sagarmatha National Park, Nepal	(Stevens 1997b)	National park	• Provisions under the National Parks Act were designed for subsistence users • Locals invited to participate in co-management, with a focus on rural development • Sherpa Advisory Board established	Co-management as institutional building
Institutional Building	National Parks across Indonesia	(Moeliono 2008)	National park	• Non homogenous groups chose to collaborate with different levels of government agency (e.g. some resources users chose local level government over provincial) • Elected bodies advised to carry out management and potential coordination by an external or purpose built institution, such as an NGO	Co-management as problem-solving
A Process	Great Barrier Reef World Heritage Area, Australia	(Nursey-Bray & Rist 2008)	Marine protected area	• Continued attempts by local people to engage in co-management • Realisation of epistemological barriers to co-management	Co-management as trust and social capital

Problem-solving	Lake Racken, Sweden	(Olsson, Folke & Berkes 2004)	Lake/Fishery	• Identification of high levels of acidification in the lake • Monitoring the pH levels of the lake • Self organised Fishing Association established to enhance efforts by property owners to stop acidification	Co-management as institutional building
Trust and Social Capital	Caribou Management in Canada	(Kofinas 2005)	Wildlife	• Development of understanding between the hunters and researchers • Appreciation of traditional and new forms of caribou management options • Legitimacy of knowledge base between the partners in co-management	Co-management as knowledge generation
Knowledge Generation	British Columbian Forests	(Pinkerton 1998)	Forests	• Forged new paradigm of management between traditional knowledge and Western landscape ecology • Innovative management design, including local leadership • Teamwork and co-production of new knowledge around proposed management plan	Co-management as social learning
Social Learning	US *vs* Washington: Boldt Case, USA	(Dale 1989)	Fisheries	• Relevant changes in understanding problems and decisions by involved parties • Partners deconstructing and reconstructing problem solving e.g. ‘frameshifts’	Co-management as a process

Berkes (2008) *faces of co-management* provide an avenue to operationalise co-management in different cases. Similarities in these conceptualisations suggest that collaborative arrangements can be a combination of the many *faces of co-management*. That is, co-management in the case of the Native Treaty Tribes in the Northwest fisheries of Canada can be conceptualised as an example of social learning and institution building. Similarly, in Australian protected areas co-management can be explained as power sharing and governance. Therefore, there is no general model of co-management that prevails. With this in mind, developing co-management arrangements that are context specific and embedded in the social and cultural constructs of a region is far more likely to have a higher degree of success than those that are not (Plummer & FitzGibbon 2007).

Berkes (2007a, 2008) notion of the *faces of co-management* is an innovative framework for dealing with the human and relational complexities of co-management and a way the author of this thesis has chosen to demonstrate the diversity of existing co-management arrangements. Although certain case studies have been chosen to demonstrate the conceptualisation of a single *face of co-management*, it could be argued that some of these case studies can be understood as representing many or all of the *faces of co-management* (as presented in Table 4). One example that incorporates several faces of co-management is the Great Barrier Reef World Heritage Area (GBRWHA). Nursey-Bray and Rist (2008) analyse the efforts of indigenous Australians trying to establish co-management arrangements within the GBRWHA. In this study, the authors review selected attempts, over a five-year span, of the Aboriginal Corporation, Girringun, to adopt co-management arrangements with the authority of the marine park. Nursey-Bray and Rist (2008) discuss power relations as a central focus for this research into co-management; however on closer inspection, other *faces of co-management* can be seen in the author's analysis. Table 5 overleaf demonstrates possible ways to conceptualise the proposed co-management arrangements for the GBRWHA. Despite the unsuccessful nature of some of the co-management propositions by the Girringun Association, the study provides important insights into the complexities surrounding the implementation and development of co-management arrangements.

Table 5: Evidence of the Conceptualisations of Co-management from the Great Barrier Reef World Heritage Area

Conceptualisations of Co-Management	**Evidence in the study of the Great Barrier Reef World Heritage Area**
Co-management as power sharing	'It is important to this study in relation to the way in which power relations were constituted within the co-management dialogue and projects…the distribution of power in this context must build capacity for institutional sustainability both within and across institutions' (Nursey-Bray & Rist 2008, p.119)
Co-management as a process	'Their (Girringun) proposal therefore, presented an iterative and staged co-management process designed to build capacity, skills, joint expertise and mutual trust over time; and one in which a suite of co-management activities could be undertaken' (Nursey-Bray & Rist 2008, pp.121-122)
Co-management as governance	'…choices between statutory versus non-statutory management, traditional or contemporary management regimes and the competing priorities of economy, culture and environment…Western science and power of the World Heritage construct have discursive dominance in this context. The implicit clash of these systems thus ultimately resulted in each party maintaining different foci for the management direction' (Nursey-Bray & Rist 2008, p125)
Co-management as knowledge generation	'Resource managers aspiring to develop cross-cultural forums within management cannot help but be informed by an awareness of the history of racial division in Australia and the current social and economic conditions prevailing in Indigenous communities' (Nursey-Bray & Rist 2008, p.125)
Co-management as trust and social capital	'Implicit in this staged approach was the recognition that Girringun members needed training and support and conversely that Department staff needed to build trust and belief in the capacity of Girringun members to help deliver environmental as well as cultural outcomes' (Nursey-Bray & Rist 2008, p.122)

The discourse on co-management introduces the concepts of knowledge generation and social learning, aligning with the conservation paradigm shift in focus towards multi stakeholder approaches. Building on the theory of co-management and acknowledging that insights from social-ecological arenas 'suggest the importance of adaptation and learning', a correlation can be seen with the co-management attributes of 'flexibility and social learning' (Armitage, Berkes & Doubleday 2007b, p. 6). This is where the co-

management and adaptive management narratives join. It is the notion of co-management as knowledge generation and social learning that requires discussion around the newly articulated interdisciplinary approach, adaptive co-management.

2.5.3 Moving on from Co-management: Adaptive Co-management

So far this chapter has identified the changing nature of protected areas and identified those once disenfranchised local residents and resource users as legitimate stakeholders in the management of the commons. The concept of World Heritage has been introduced, highlighting global efforts for conservation and the protection of both natural and cultural resources. However, with efforts focused on participatory approaches to natural resource management, managing WHAs becomes a challenge of managing people and the environment in a symbiotic manner. Co-management has been proposed as a possible technique for managing natural resources and protected areas; the conceptualisation and the evolution of co-management has lead to a new concept: adaptive co-management. In this section, emerging literature surrounding adaptive co-management will be introduced and a discussion of the research which contextualises it will follow.

Adaptive management originates with Hollings (1978) and Walters (1986); these seminal works challenged traditional fixed-state environmental assessment and ‘control and command’ styles of management. Instead, a style of environmental management was proposed that was designed to build resilient social-ecological systems. This design predicates that management is well connected with social, environmental and economic understandings of a system. Then, an iterative approach is implemented whereby a series of possible alternatives to environmental management are generated, effective policies to achieve objectives are implemented, specific indicators are identified, testing occurs and then evaluation of outcomes is conducted with all stakeholders involved: the learning-by-doing approach to environmental management (Holling 1978). By design, systems managed with this approach should be more resilient, and better able to deal with change and uncertainty; this is true of both the environmental and social actors participating in adaptive management (Holling 1978; Plummer & Armitage 2007c).

Authors of adaptive co-management acknowledge that many of the concepts surrounding this body of literature stem from the field of common property and the constant battle of managing natural resources that have shared usage rights among numerous stakeholders (Armitage, Berkes & Doubleday 2007b). With the well-established literature surrounding co-management and adaptive management, Armitage and colleagues (2007b) argue that the two merged, forming a new approach to natural resource management. The early works of Berkes and Folke (1998), Pomeroy (1998) and Pinkerton (1989a) form the foundations of co-management and are used to conceptualise it in a way that researchers of adaptive management can relate to. In fact, it is the reconceptulisation of co-management that has led to new approaches that are drawn from thinking surrounding adaptive management. The continued efforts of Berkes, and more recently Armitage and Doubleday, have meant the recognition of adaptive co-management as a multidisciplinary approach to natural resource management.

Berkes explains that it is problem solving in co-management that has evolved into adaptive co-management:

> Management decision-making implies choices between different alternatives, while problem solving has to do with the process of generating these alternatives. Co-management evolves adaptively as a result of deliberate problem solving. But adaptive management requires collaborative processes to establish consensus among the parties before feedback-based problem solving can proceed. Hence co-management and adaptive management complement one another (2008, p. 1694).

There have been several attempts to articulate a working definition of this newly reconceptualised form of natural resource management. Armitage et al. (2007b, pp. 5-6) present definitions of adaptive co-management and highlight some features of co-management arrangements. Below are three definitions of adaptive co-management, they include:

> A long-term management structure that permits stakeholders to share management responsibility with a specific system of natural resources and to learn from their actions (Ruitenbeek & Cartier 2001, p. 8)

> A process by which institutional arrangements and ecological knowledge are tested and revised in a dynamic, ongoing, self-organized process of learning-by-doing (Folke et al. 2002, p. 20)

> Flexible, community-based systems of resource management tailored to specific places and situations, and supported by and working with, various organizations at different scales (Olsson, Folke & Berkes 2004, p. 75)

Features of adaptive co-management include:

> - Shared vision, goal, and/or problem definition to provide a common focus among actors and interests
> - A high degree of dialogue, interaction, and collaboration among multi-scaled actors
> - Distributed or joint control across multiple levels, with shared responsibility for action and decision-making
> - A degree of autonomy for different actors at multiple levels
> - Commitment to the pluralistic generation and sharing knowledge
> - A flexible and negotiated learning orientation with an inherent recognition of uncertainty (Armitage, Berkes & Doubleday 2007b, pp. 5-6)

Armitage et al (2007b, p. 5) go on and state that 'adaptive co-management provides an evolving and place-specific governance approach that supports strategies that help respond to feedback (both social and ecological) and orient social-ecological systems towards sustainable trajectories'. Some key developments in the literature of adaptive co-management provide breadth to the discussion of how best to manage social-ecological context specific cases. Armitage, Marschke and Plummer (2008) investigated the paradox of learning in adaptive co-management arrangements. In addition, research on the resilience of social-ecological systems has also been largely explored (Olsson, Folke & Berkes 2004; Plummer 2010; Plummer & Armitage 2007b; Schultz & Lundholm 2010), testing the idea of adaptive co-management as an appropriate approach to such dynamic arenas.

Adaptive co-management involves the reworking of stakeholder relationships and the devolution of power (Armitage, Berkes & Doubleday 2007b). This idea runs through much research in adaptive co-management, and marine areas have provided one arena for testing this approach. A significant number of case studies using this theory are based in coastal marine zones and marine protected areas around the globe (Butler et al. 2010; Ferse, Manez Costa, Schwerdtner Manez, Adhuri & Glaser 2010; McConney, Mahon & Pomeroy 2007; McConney, Pomeroy & Mahon 2003; Robards & Lovecraft 2010). While not all of these studies incorporate the terminology of the adaptive co-management framework, the discussion predominately centres on issues of co-

management with local residents and resource users and the need for more adaptive and flexible approaches to deal with dynamic social-ecological arenas.

In addition to research in fisheries management, a number of other types of natural resources have been studied using adaptive co-management theory. A study in Bangladesh focused on the involvement of local resource users in the management of a mangrove reserve on an island off the coast of the mainland (Iftekhar & Takama 2007). With the continued degradation of the resource, Iftekar and Takama suggest that the adoption of an adaptive co-management regime could conserve the region in a more equitable way. Researches of a hardwood plantation forest in Australia have applied the theory of adaptive co-management also, focusing on the development of the bridging institution in control of the arrangement (Leys & Vanclay 2010). In this study, the role of the university and researchers is identified as key in the development and growth of the bridging institution and the ongoing efforts towards social learning from the large group of stakeholders involved (Leys & Vanclay 2010). In another example, forests have also been used as a testing ground for the theory of adaptive co-management. Wollenberg, Edmunds and Buck (2000) use the method of scenario planning to test the benefits of adaptive co-management arrangements in forests in Indonesia and Madagascar. These authors discovered that generating possible alternative scenarios with the stakeholders involved in adaptive co-management can result in the ability to make more appropriate decisions surrounding natural resource management that are more aligned with the needs of local resource users and the expectations of the governing parties (Wollenberg, Edmunds & Buck 2000).

Plummer and Fennell (2009) present adaptive co-management as a prospect for managing protected areas for the sustainable development of tourism. While the idea of adaptive management as a tourism planning strategy has been explored (Reed 1999), Plummer and Fennell's (2009) article is the first of its kind to explicitly articulate how adaptive co-management could be operationalised for sustainable tourism within protected areas. These authors argue that tourism is central in the management of protected areas, 'as touristic space has enabled local people to diversify livelihoods' and increase their involvement in parks in general (Plummer & Fennell 2009, p. 149). However, with this has come the challenge of meeting local residents' and resources users' needs surrounding protected areas, what Plummer and Fennell (2009) articulate

as common property resource problems. These ideas in particular form a central platform for this thesis and will be explored explicitly in the case study (see Chapter Four).

Bringing the discourse into a more global arena, a recent study of Biosphere Reserves[6] (BR) identified specific management practices and likened them to attributes of adaptive co-management. Schultz, Duit and Folke (2010) investigate if stakeholder participation and adaptive co-management strategies have an impact on the management performance of BR. Within the protected area framework, Schultz and colleagues (2010, p. 669) evaluate the management of 146 Biosphere Reserves concluding that, 'adaptive co-management arrangements enhance the BR's effectiveness in reaching sustainable development goals, without impairing effectiveness in achieving conventional conservation goals. In this sense, conservation becomes part of development through adaptive co-management'. While these positive results are promising, the authors insist that further qualitative in-depth studies will be required to deepen the understanding of how adaptive co-management practices function.

In addition to these varied case study examples, there have been attempts to synthesise the work of adaptive co-management theorists and provide conceptual understandings, limitations and methodological implications of this approach (Carlsson & Berkes 2005; Plummer 2009; Plummer & Armitage 2007c). From these literature summaries, evidence suggests there is still no widely accepted and proven systematic approach to the establishment or introduction of an adaptive co-management arrangement. Despite efforts over the last decade and in particular the last five years, there is still no 'common conceptual and terminological basis' (Plummer & Armitage 2007c, p. 10). In addition, these scholars insist that adaptive co-management is 'an intricately woven and highly nuanced concept that is difficult to dissect' (Plummer & Armitage 2007c, p. 10). Due to the infancy of this interdisciplinary approach to natural resource management, significant gaps remain under researched.

---

[6] The Man and the Biosphere Programme is administered by UNESCO whereby sites are designated with the aim of setting 'a scientific basis for the improvement of the relationships between people and their environmental globally' (UNESCO 2011a).

It is this lack of empirical evidence or theoretical understanding of the preparatory and introductory stages of researching and operationalising adaptive co-management that provides justification for this study. While the research into the management performance of Biosphere Reserves sheds light on the applicability of adaptive co-management on a global stage, the diagnostic approach is focused on 'testing the effectiveness of participation in general and adaptive co-management in particular' (Schultz, Duit & Folke 2010, p. 663). With specific reference to establishing WHAs, the purpose of this study is, therefore, to focus on the research and operationalisation phases of adaptive co-management, to better understand how this approach can foster collaboration and be used to create space for the voice of the local level stakeholders. The next section will highlight the small amount of evaluative literature on adaptive co-management specifically in relation to WHAs and draw out central tenets as to what practical tools can be taken from this research to be developed as a framework for researching and introducing adaptive co-management.

2.5.4 Adaptive Co-management and World Heritage Management

This section seeks to examine how the theory of co-management or adaptive co-management is applied within a global protected area framework, specifically within the context of WHA. At the time of writing, there is no known research that uses Berkes' *faces of co-management* to operationalise adaptive co-management to pursue the nomination of a WHA. Current literature offers limited examples of the interaction between the principles of co-management theory and the legislative policy environments of WHAs. In this section, these examples of adaptive co-management within the WHA framework will be highlighted by applying Berkes' *faces of co-management*. The studies provide case examples from Japan, Canada and Australia.

Shiretoko Natural World Heritage Area in Japan provides a case study of the successful integration of the adaptive co-management approach as a vehicle for establishing a global protected area policy. Japan has had a decentralised co-management arrangement with local fishers and the government in partnership since independence in the 19th century (Matsuda, Makino & Sakurai 2009). Following the decision to nominate the region for World Heritage listing, the 'approach was not to eliminate local fishers from the area, but to place their activities at the core of the management scheme to sustain

ecosystem structure and function' (Makino, Matsuda & Sakurai 2009, p. 207). These actions demonstrate a vastly different approach to conservation management than was described in the traditional paradigm of protected area designation. Here, local resource users are given a central role in discussions surrounding the establishment of this World Heritage management plan.

Using the conceptualisations provided by Berkes (2008), this case can provide evidence of how co-management was operationalised; providing information on institutional building, knowledge generation and trust building are all evident in this case study. Firstly, the development of a new organisation, specifically designed to facilitate co-ordination across government and local sectors (Makino, Matsuda & Sakurai 2009), exemplifies institutional building working towards successful co-management. Evidence of ecological knowledge sharing of the resource between Russia and Japan at the international level (Matsuda, Makino & Sakurai 2009), and local fishers and scientists at the national level (Makino, Matsuda & Sakurai 2009), demonstrates how knowledge generation formed a main element of co-management. Finally, building trust between local fishers, scientists and environmental groups was an important attribute identified by Matsuda and colleagues (2009) as influential in the process of collaboration on the WHA management plan.

While this example contributes to the understanding of how adaptive strategies in a pre-established co-management can positively influence the development of a World Heritage management plan, the study offers little insight into how to research and initially establish a co-management arrangement. In addition, as discussed in previous sections, the majority of natural resource research using co-management theory has been focused on fisheries. There is little attention paid to mixed arenas, where co-management arrangements would need to be developed for example, to govern rainforest, waterways and a common walking track with burgeoning international tourism reliance.

An example from Australia however, also tackles the paradigms of protected areas and co-management and determines that their incompatibility is the reason that aspirations for co-management will not be fulfilled. Nursey-Bray and Rist's (2008) study of the Great Barrier Reef World Heritage Area (GBRWHA) provides insight into this issue.

The Great Barrier Reef Marine Park was established in 1975, and declared a World Heritage Area in 1981. The long established management of the Marine Protected Area (MPA) is made up of several zones, allowing different levels of use from different stakeholders, including indigenous residents and other resource users. It was a goal during the establishment of the MPA that the role of indigenous resource users and their ability to practice traditional resource management be formally outlined in the legislative framework. This study is focused on three attempts by the Aboriginal Corporation Girringun, to develop co-management proposals designed to enhance the future role of the of locals in the management of the MPA.

The co-management proposal developed by the Girringun Corporation comprised three stages for review of the MPA authority, these were: (1) specific co-management direction of the Girringun Saltwater Ranger Unit; (2) specific directions of the Sea Country Tourism; and (3) managing the use of traditional marine resource in Girringun sea country with the development of TUMRA. The 'TUMRA is a legal instrument that identifies how traditional owner groups will manage their use of marine resources in their clan estates' (Nursey-Bray & Rist 2008, p. 124). To formalise the co-management proposals and to insure their requests were genuinely considered, the Girringun Corporation sought assistance in developing these proposals within the Western framework of biodiversity management (Nursey-Bray & Rist 2008).

The involvement of the indigenous residents and resource users in the GRBWHA management is highly regulated under the TUMRA and associated legislation surrounding the MPA, so as not to compromise the World Heritage values. What is evident in this case is that the strict legislative regulation surrounding this WHA does not have the flexibility to change and adapt, as circumstances evolve. The Aboriginal people are finding that barriers to extending their involvement of *caring for country* and the right to traditional resource use are held within the legal framework surrounding the MPA (Nursey-Bray & Rist 2008). The GBRWHA has a dedicated Co-operative Research Centre, under which several studies regarding indigenous management in this WHA have been completed (Day 2002; George, Innes & Ross 2004; Ross et al. 2004), with a focus on the traditional owners' aspirations towards co-operative management.

In Nursey-Bray and Rist's (2008) study, the ability of the local resource users and the Marine Park Authority to find consensus on a reasonable level of involvement and decision-making for the Indigenous locals in this WHA is proving difficult. Despite the Marine Park Authority wanting to be seen as being inclusive of the traditional owners' aspirations and cultural significance of the region, in reality, the pre-established legislated management regime of the GBRWHA cannot provide the necessary space to combine the proposed co-management proposals of the Aboriginal people. The intersection of co-management within the existing management legislation of the MPA has consequences for the future involvement of the indigenous resource users (Nursey-Bray & Rist 2008). The authors articulate the usefulness of co-management in the protected area context while identifying the difficulties of establishing co-management within the legal and statutory framework of the already established marine protected area. There is, essentially, an incompatibility of the protected area and co-management models: 'The clash between cultures and between the paradigms of co-management versus protected area management means that management remains a contested area' (Nursey-Bray & Rist 2008, p. 126).

The analysis of the pre-existing legislative framework surrounding the management of the fisheries in Japan has provided the foundation to base the establishment of World Heritage management plans and policy (Matsuda, Makino & Sakurai 2009). Whereas in the case of the GBRWHA, the participatory aspirations of the Indigenous Aboriginals were not considered in the creation of the legislative framework (they potentially didn't exist) that governs the WHA. Furthermore, the inflexible nature of the marine park legislation means that despite the locals' attempts to introduce co-management and increase their level of participation, there is no avenue for this to succeed until changes are made at the jurisdiction level.

Another difference between the two cases is the presence of a multi-billion dollar (Nursey-Bray and Rist 2008) tourism industry that rests on the sustainable management of the GBRWHA. Finally, one cannot ignore the historical context of each case, particularly in Australia where the well-documented treatment of Indigenous Aboriginal and property rights have an impact on the current working relationship with the government (George, Innes & Ross 2004; Hill 2006; Nursey-Bray & Rist 2008; Wearing & Huyskens 2001; Zurba 2010). However, generalisations can hardly be made

from only two case studies. There is a need for additional empirical evidence, specifically focused on the initial stages of researching and implementing co-management arrangements, to better understand how local voices can be heard and how co-management of natural and cultural resources can be managed.

The growth of adaptive co-management, both theoretically and methodologically, was recently demonstrated in a case study of the Wet Tropics WHA in Australia. Hill and colleagues (2011) acknowledge their study is situated within an adaptive co-management theoretical framework, and they suggest dynamism and contextual specificity can be appropriately explored by using this approach. Their research examines the role of indigenous governance of bioculturual diversity in the Wet Tropics WHA in Northern Queensland. The study was a co-researched undertaking, where both indigenous and non-indigenous researchers collaborated, and focused on understanding how Aboriginal Australians govern their land and protect both their cultural and natural diversity in concert.

'While adaptive co-management is clearly not a universal answer, experiences and knowledge from natural resource management raise salient prospects for the approach to be insightfully applied to protected areas' (Plummer & Fennell 2009, p. 149). Consistent with studies presented in this section, there remains a lack of ability to design and implement adaptive co-management strategies at the beginning stages of protected area designation, and specifically WHA development. Lemelin and Bennett (2010) in their study of a proposed WHA in Canada also suggest that future academic research needs to focus on how co-management, as a participatory approach, can give voice to locals and ensure they have a central role in the development and execution of World Heritage. While adaptive co-management is a relatively new interdisciplinary approach, the small amount of research into the application of this theory into the practice of World Heritage suggests there is a need for more research, particularly focusing on the initial stages of site nomination in order to create frameworks that create space for the voice of the local.

2.5.5 Pacific World Heritage – a testing ground for Adaptive Co-Management?

The Pacific region has specifically been identified as underrepresented on the World Heritage List (UNESCO 2010d). The World Heritage Centre adopted a regionally focused program designed to rectify this underrepresentation and increase the Pacific's uptake of World Heritage: The World Heritage Pacific 2009 Programme. In this section, some of the results of the Pacific Programme, as well as subsequent literature on the practice of World Heritage in the Pacific will be explored. Specifically, the role of landowners, as differentiated in Chapter One from local residents or resource users, comes into the forefront of discussions of how World Heritage works in the Pacific.

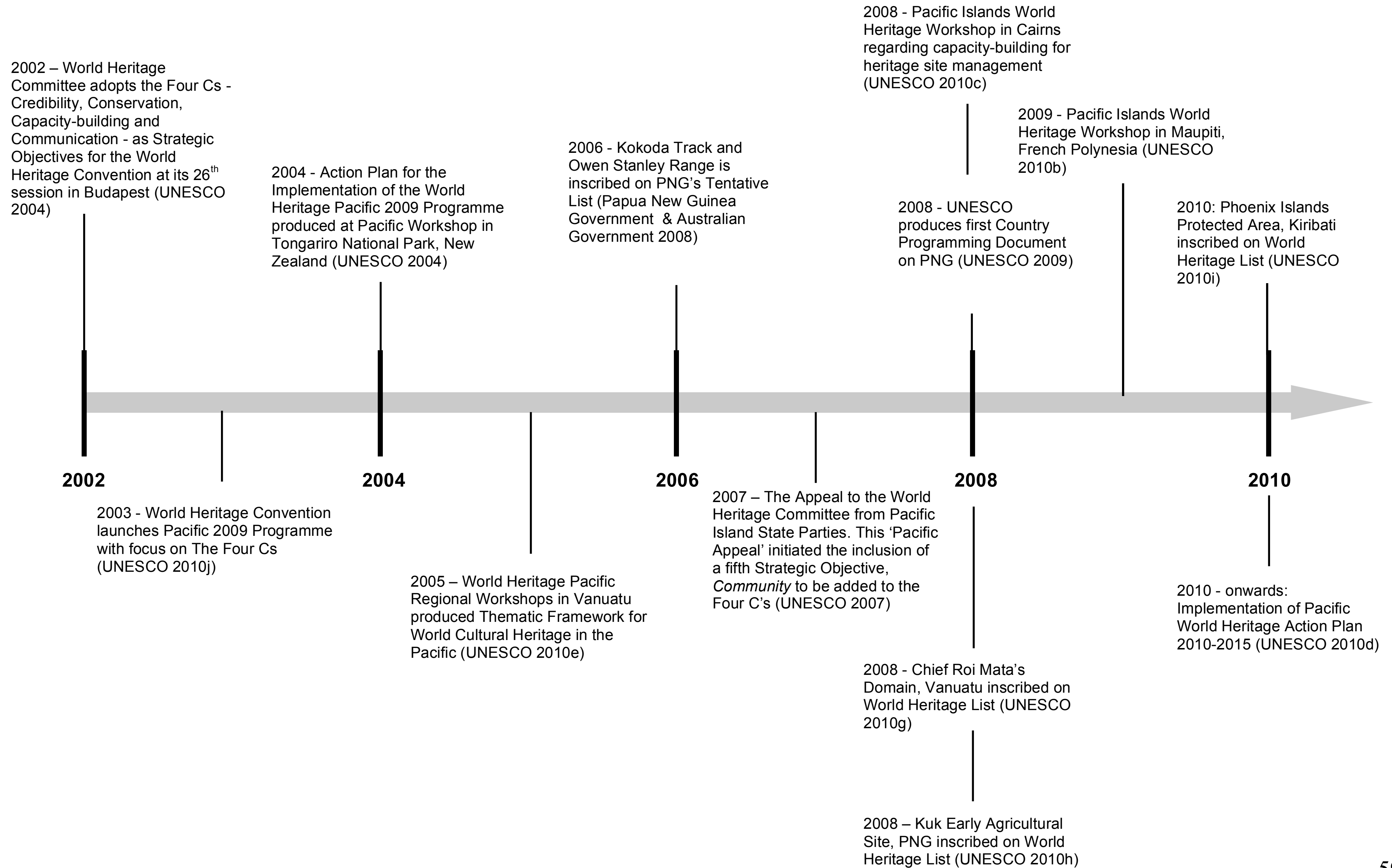
In 2004, a workshop was held in Tongariro National Park, New Zealand, establishing a Five Year Action Plan for the Implementation of the World Heritage 2009 Pacific Programme (UNESCO 2004). This was designed to assist Pacific Island Member States with the challenges they face regarding the uptake of the Convention. Specifically, these include:

> - Pacific Island countries and territories generally have very small land areas and populations (although very large sea areas).
> - Heritage management agencies are small, handle many functions, and have very limited resources.
> - Distances between countries are enormous, and travel can be a significant cost for activities.
> - Communication between isolated areas impacts on implementation timetables.
> - Decisions concerning sites require extensive consultation because most land (and sea) is held under customary ownership. (UNESCO 2004, p. 1)

Further workshops in 2008 and 2009, saw a review of the Pacific 2009 Programme and a new Pacific World Heritage Action Plan 2010-2015 was created (UNESCO 2010d). This was designed to assist Pacific Island Member States with the challenges they face regarding World Heritage, in particular, 'decisions concerning sites require extensive consultation because most land (and sea) is held under customary ownership' (UNESCO 2004, p. 1). It is the issue of landownership and hence, genuine community involvement that has now become a focus for World Heritage in this region and a focus of this study is to determine if it parallels with the development of protected area management.

A timeline of World Heritage in the Pacific region has been constructed to demonstrate the evolution of this specific program (see Figure 1 overleaf). This timeline demonstrates the shift from the recognised acceptance of preserving cultural heritage, of local residents and resource users, to a focus on building capacity and empowering locals to preserve and manage their own heritage resources. The World Heritage Pacific 2009 Programme is establishing a protocol for building capacity in the Pacific region to manage and preserve their unique natural and cultural heritage.

Figure 1: Pacific World Heritage Timeline



The approach to World Heritage designation in the Pacific is vastly different from the conventional approach to protected area management. Once relocated and disenfranchised from their lands, local residents and resource users in the Pacific now have prominent roles in the organisation and management of protected areas, even at the global level. In the Pacific, locals are now the focal point of discussions in the establishment of new global protected areas where issues of capacity-building and empowerment are of key concern to their engagement. Australia officially established an Australian Funds-in-Trust Agreement to support the efforts of Pacific nations towards World Heritage activities, including capacity-building workshops and assistance with management plans (UNESCO 2013). Interestingly, since the Australian Government gained a seat on the WHC, there has been an increase in focus on the WHAs in the Pacific and consequently more contributions to the academic literature in this topic.

Scholars of World Heritage in the Pacific articulate that governments have been rushing into nominating sites without the capacity to manage the WHAs (Smith 2011). This is presented in the case of East Rennell WHA in the Solomon Islands, the first WHA to be nominated by a Pacific Island Nation in 1998 (Smith 2011). Smith's study presents a diagnostic case study of the nomination of East Rennell. East Rennell was the first natural site to be inscribed on the WHL to be managed under customary management. The site's traditional land tenure was considered appropriate management of the WHA and representative of the way in which nature and culture may coexist (despite this recognition, at the time of inscription, the site was only listed as a natural site). While traditional management was considered sufficient for the management of the site, nowhere in the nomination dossier was traditional management canvassed (Smith 2011). The nomination itself was produced by a Pacific World Heritage Officer in conjunction with others supported by the New Zealand Government, however, immediately following the inscription prolonged political unrest meant the Solomon Islands Government had little capacity to assist the communities to manage the site.

In addition to the lack of government capacity, the communities felt tricked into signing over their land for the purpose of WHA designation. Communities were at first excited about the nomination and saw the nomination as recognition of their cultural identity

(Smith 2011). However, throughout the period of civil unrest and in the years that followed, the local communities of the WHA felt they were misguided as to what World Heritage really meant, they felt they had received none of the promised economic development from the site being listed, and consequently they were not receiving any benefits for giving up their land. In 2011, Smith (2011) noted that community management of the site, without a favourable political environment from the government led to the lack of sustainable conservation of the region. Further, the listing of the WHA as a natural site, with no respect for the cultural values that have evolved and are currently deemed sufficient to manage the land of the WHA, will likely continue to create tensions at the local level. Smith states that while there is still no formal recognition of the traditional land tenure and traditional resource use, the much needed link between the communities, the national government and the WHC will remain unclear.

Another WHA in the Pacific that has received attention from the academic community is Chief Roi Mata's Domain WHA in Vanuatu. With a specific focus on the buffer zone surrounding the WHA, Trau, Ballard and Wilson (2012) provide an interesting perspective of how local communities have localised World Heritage nomenclature into their understandings of traditional land management. Their research focuses on providing a 'nuanced understanding of the apparent contradictions and ambiguities underlying local reactions and responses to the globalised theory and praxis of buffering World Heritage' (Trau, Ballard & Wilson 2012, p. 2). These authors argue that there is a need to focus on how local institutions and communities adapt the western principles of World Heritage in order to achieve conservation.

Particularly relevant to this research is the role that customary landowners in Vanuatu play in the management of World Heritage. Trau and colleagues state that:

> World Heritage areas in Melanesia rely on the continuing cooperation and support of rural landowning communities and individuals. In this context, state-based processes and mechanisms for the protection and management of World Heritage buffer zones are only effective when aligned with or augmenting existing local customary practices and provisions (2012, p. 6).

While Trau and colleagues (2012) study of Chief Roi Mata's Domain study focuses on the buffer zone, (there are no residents within the Chief Roi Mata's Domain WHA and approximately 670 residents in the buffer zone) (Ballard & Wilson 2006) which they explicitly state remains under customary landownership, they do discuss the landownership situation of the 'core' World Heritage Site. This is a particularly important due to land leasing becoming prevalent in Vanuatu. While the leasing of customary land has led to growth in the real estate industry and provided significant opportunity for foreign investors and increased cash incomes for landowners, this process effectively undermines the local sovereignty and alienates local people from their customary lands (Trau 2012). According to the UNESCO nomination dossier for the WHA, the core World Heritage site does remain under the ownership of four customary chiefs and landowners. At the time of nomination, there was a proposition to register the site as a Community Conservation Area under the Environmental Management and Conservation Act 12 of 2002 (Ballard & Wilson 2006) in order to strengthen protection, not override customary ownership. At the time of writing, it is unknown whether the site has been gazetted as a Community Conservation Area or whether the four principle landowners remain at the centre of decision making for the WHA.

In both of these WHAs in the Pacific, the issues of landownership and local resident's role in protection and management have been brought to the forefront of discussions. Despite going through the process of WHA nomination and inscription a decade apart, the cases of East Rennell and Chief Roi Mata's Domain have faced similar issues of how to best use and manage customary landowners in the practice of protecting global World Heritage. In countries where culture and nature are inextricably linked, and customs and traditions guide social structures and stakeholder organisation at the local level, the convergence of universal heritage values has caused contestation. This limited research on World Heritage in the Pacific alludes to some of the key challenges being faced by national governments in order to keep their status as signatories to the Convention.

A further example of the practice of World Heritage in the Pacific is the inscription of PNG's first and to date only WHA, Kuk. While the examples in the Pacific highlight

challenges for the region more generally, specific literature on the Kuk Early Agricultural Site in the Western Highlands province of PNG is limited. While the process of establishing the nomination for the site began some 10 years earlier, the site itself was nominated and designated in 2008 (Denham 2012). The process of nomination and the subsequent institutional capacity to manage the site is still today an issue for World Heritage governance in PNG more generally and Denham's study serves as a post-implementation diagnostic analysis.

Denham (2012) the lead Australian consultant appointed by the Department of Environment and Conservation (DEC), suggests that while the Kuk WHA site was eventually nominated and ultimately successfully designated, World Heritage in PNG has a significant road to travel in terms of developing organisational and institutional capacity. Denham explains that while the intentions of several agencies involved in the preparation of the nomination at some stage were positive (e.g. the PNG National Museum and Art Gallery and the National Cultural Commission for example), ultimately issues of institutional frameworks to guide cooperation and coordination failed and stakeholders were marginalised and alienated from the project. He states:

> these problems were institutional; they resulted from the lack of an institutional framework within the country that included and defined roles for different stakeholder groups involved in World Heritage, whether for the country as a whole, for specific sites, or for establishing linkages between local, provincial and national levels. (Denham 2012, p. 100)

To this end, the site was listed on the provision that post-nomination requirements were fulfilled. These included a completed management plan for the site, with confirmation from the local landowners for its approval and implementation; official protected area gazettal (through the designation of a Conservation Area) and a formal memorandum of understanding between relevant national, provincial and local government agencies and other stakeholder groups, to mention just a few (Denham 2012). According to Denham (2012), at this stage, there has been very limited progress on these items, and currently the only achievement has been the development of the memorandum between DEC, the Western Highlands Provincial government and with principal Kawelka land-holders. He believes the lack of progress is due to insufficient capacity at the institutional level to manage WHAs. Importantly, deficiencies in expertise, a lack of funding and

institutional fragility 'need to be considered against broader backdrops of political instability and socio-economic development' (Denham 2012, p. 102).

The issue of a lack of government institutional capacity resonates through all the studies presented here on WHAs in the Pacific. Importantly, all of these studies share a central tenet; that customary landowners have a central role to play in World Heritage, and it is a process to understand how that role can be created, legitimised and managed in the establishment of future WHAs. None of these studies have specifically addressed the influence of landownership on WHA designation, nor have they explicitly explored existing collaboration in each site, pre-inscription, to understand how landownership manifests at the local, regional and national levels. This information would assist in future studies of World Heritage in the Pacific, and contribute to a greater understanding of how the role of local residents, resources users and landowners has changed the way in which World Heritage is practiced globally.

2.6 Summary

This chapter has presented a review and synthesis of the literature surrounding the changing conservation paradigm and elaborating on the move away from the protection of wilderness and highlighting the transformation of protected areas and the legitimisation of local involvement in management. What followed was a discussion of how the implementation of the Convention has evolved, reflecting the changing approaches to conservation management and a review of literature on World Heritage across the globe. This was followed by an investigation of co-management theory as a possible solution to the tragedy of the commons and a path forward to understanding how to manage protected areas and WHAs, where local residents and resources users have a key role to play. Finally, this chapter presented the limited literature on WHAs in the Pacific, leading to the question of how co-management, as an approach to understanding collaboration, can be used in the establishment and creation of a WHA?

Chapter Three: Methodology

This chapter outlines the methodological approach employed to investigate co-management as a tool for understanding relationships that guide common pool resources (CPRs) on the Kokoda Track. The choice of methodology was informed by the conceptual and contextual perspectives which have been outlined in Chapters One and Two. Based on the existing research and the research questions posed for the thesis, a case study approach was determined to be the most suitable methodology. Details of the qualitative research design, case selection, data collection and analysis, and ethical considerations are presented in this chapter. The chapter concludes with a discussion on the limitations and constraints of the methodological approach chosen for this study.

3.1 Research Purpose

Robson (2011) recognises that the purpose of much research is to *explore*, *describe* and/or *explain* phenomena. This thesis aims to achieve all three. The aim of this research is to explore co-management as a concept for understanding collaboration and as a tool for the development of a World Heritage nomination for the Kokoda Track. Three research questions were developed in order to achieve this aim, they include:

- How can co-management be used to investigate the collaboration of stakeholders in the listing of a World Heritage Site?
- How does co-management enable local communities to become engaged in the listing of a World Heritage Site such as the Kokoda Track?
- What is the influence and impact of traditional landownership practices on the listing process for a World Heritage Site?

These research questions were used to guide the study and achieve the overall aim. It is acknowledged that these questions were influenced by the disciplinary discourse and the context of the case study which will be outlined next.

3.2 Situating the Research

Research philosophy or paradigms refer to the 'basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways' (Guba & Lincoln 1998, p. 200). Guba and Lincoln argue that identifying the research philosophy or paradigm in a study is the first step in an investigation. Hence, the epistemological paradigmatic stance of a researcher influences the choice of research design and methodological techniques employed in a study. Creswell (1998) goes one step further, stating that the research philosophy is inextricably linked to the procedures employed in a study. This section will situate the research by exploring the paradigm used in the study of co-management and the listing process for a World Heritage Site on the Kokoda Track.

The focus of this study is primarily concerned with the social dimensions and stakeholder relationships that contribute to natural resource management. While traditional environmental management studies have mainly been concerned with the ecology of natural resources and the 'science' behind its management (Turner 2003), more recently there has been a greater interest in understanding the social dimensions and complexities affecting natural resources and the success of management models (Berkes & Folke 1998). However, as explored in Chapter Two through the discussion on co-management, understanding the relationships between social actors in natural resource management is highly complex. As a result, some scholars (e.g. Armitage, Berkes & Doubleday 2007a) suggest research into co-management theory and practice should be context specific in order to ensure contextually specific worldviews are considered and explored.

The research philosophy of anthropologists' and sociologists within the co-management field of inquiry is useful for consideration in this study. Their interest focuses on the capacity of Western scientific management models that go beyond 'science' and create a space for the inclusion of traditional methods of natural resource management (Natcher, Davis & Hickey 2005; Pinkerton et al. 2008; Spaeder & Feit 2005; Stevenson 2006; Thom & Washbrook 1997). Essentially, anthropologists are calling into question the epistemological rigidity of scholars in this field (Natcher, Davis & Hickey 2005),

insisting that there needs to be wider acceptance of differing epistemologies of participants involved in co-management arrangements.

Researchers (Creswell 1998; Silverman 2010) acknowledge that their view of reality, and their worldview as a social constructionist plays an important role in the methodology employed in research. The qualitative research design used in this thesis is underpinned by an 'interpretive' research approach. This is based on a theory of knowledge which assumes that reality is socially constructed through language, consciousness and shared meaning (Patton 2002; Stake 1995). Creswell articulates:

> Qualitative research is an enquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyses words, reports detailed views of informants, and conducts the study in a natural setting (1998, p. 15).

The qualitative strategy employed in this study has been designed to elicit in-depth and nuanced information, which has the potential to offer insights into the often complex contexts of the research problem. Qualitative research and its various forms of data collection have been widely used for exploring the social dimensions of natural resource management and particularly co-management (Armitage, Berkes & Doubleday 2007a; Carlsson & Berkes 2005). Some examples of these include case study design with semi-structured interviews and participant observation (Nursey-Bray 2006), informal interviews (Matsuda, Makino & Sakurai 2009) and case study design with document review and semi-structured interviews (Zurba 2010).

3.3 The Case Study as a Design Framework

A case study is described by Yin (2003, p. 13) as an empirical enquiry that investigates a contemporary phenomenon within its real life or naturalistic context, when the boundaries between phenomenon and context are not clearly evident. 'The distinctive need for case studies arises out of the desire to understand complex social phenomena' (Yin 2003, p. 3) and can be exploratory, descriptive or explanatory in nature. This thesis is driven by 'how' and 'what' types of research questions and consequently is designed to be exploratory in nature.

The case study is a recognised technique that is commonly used in research that focuses on contemporary events and is used in attempts to ascertain how and/or why a particular event occurs (Simons 2009; Stake 2005; Yin 2009). Case studies can provide social scientists with good examples which strengthen the field of study (Flyvbjerg 2006; Simons 2009). A number of arguments can be put forward for employing a case study approach. To begin with they can be substantive research projects in their own right and can present general propositions relating to theory and policy issues (Gomm, Hammersley & Foster 2000; Veal 2010). Case study research however does not commonly result in generalisations about a population as a whole, but they can have valid things to say in relation to theory in the case of explanatory research (Flyvbjerg 2006).

It is argued that the case study chosen for this study did yield important context specific information of how relationships work on the Kokoda Track and these may contribute to an understanding of why these relationships are useful in the development of a potential WHA for this part of PNG.

According to Stake (2000) the advantage of case study research is that it allows cases to be approached in a holistic manner in order to analyse and interpret complexities using qualitative methods rather than seeking causality. He suggests that 'many find the search for cause of little value, and dramatize instead the coincidence of events, seeing some events as purposive, some situational, many interrelated. They favour inquiry designs that seek data describing the diverse operations of the case' (Stake 2000, p. 400). These comments are supported by Denzin and Lincoln (2005) who suggest that theory can emerge from the experiences and interpretations of case study participants.

The qualitative research case study is widely accepted in natural resource management and specifically used to understand and develop co-management theory (Plummer & Fennell 2006). The development of co-management theory through modelling schemes has primarily been through the use of case studies; 'these efforts tend to inductively follow extensive empirical evidence…and consequently are clearly analytical' (Plummer & Fennell 2006, p. 946). The case study in this thesis will contribute to the body of knowledge by using co-management as an approach to explore what occurs

when issues of customary landownership property rights and protected areas converge in the case of the Kokoda Track's potential World Heritage Listing.

3.3.1 Case Study Selection Criteria

The Kokoda Track represents a historically significant walking track across the Owen Stanley Ranges in Papua New Guinea (PNG). The Kokoda Track was the scene of a tough and bloody battle between Japan, Australia and New Zealand in World War II (Wearing, Grabowski, Chatterton & Ponting 2009). This site now also represents an important tourism product for the people of PNG and a source of income and development for the 14 clans that reside on the 96km long track (Wearing et al. 2009). Socially, the Track represents the home and livelihood of subsistence based customary landowners and their families. The Kokoda Track was chosen as the case study for this research due to its status as a Tentative World Heritage Area (WHA) and the ability to study co-management close to its inception in a complex socio-ecological arena.

The Kokoda Track Authority (KTA), a special purpose authority set up by the government in order to manage tourism along the Kokoda Track (this organisation will be discussed in more depth in Part 2). The KTA began collecting tourism related data in 2001, at which time trekker numbers were less than 100. The Kokoda Track trekker numbers have steadily grown to 5621 in 2008 and back down to approximately 3000 in 2012. The steep decrease in 2009 was due to a number of medical related incidents on the Track as well as a fatal plane crash (Carlsen 2012). The increasing trekkers numbers has also resulted in an increase in trekking operators, in both PNG and Australia which has been supported and managed by the KTA introducing a code of conduct and licensing scheme for all operators (Carlsen 2012). The Track represents PNG's premier tourist destination (Department of Environment and Conservation 2011) and the total direct economic value of trekking on the Kokoda Track in 2011 was $AUD9 808 058 (Carlsen 2012). The value of tourism in the region contributes to existing dialogue on protection of the economic, social, cultural and environmental values of this region.

In 2006, the Kokoda Track and Owen Stanley Ranges were identified as a possible WHA and consequently enlisted on the State Parties' Tentative List. Since this time, the PNG Government, with the technical and financial assistance of the Australian

Government, have invested substantial technical and financial resources into assessing the feasibility of the region as a WHA (Wearing et al. 2009). The PNG Government asserts that currently, no protected area legislation exists for this potential WHA (Michael 2011). Further, the PNG Government acknowledge the need to develop new approaches to establishing protected areas that align with the constitutional legislation that affords and promotes the continuation of customary landownership as a community-based legal system (UNESCO 2009). Consequently, this case study was selected to specifically explore the potential WHA prior to site nomination something that Jones and Burgess (2005) note is rare.

Significant research into co-management theory is situated within a social-ecological framework with both formal and informal protected areas policies (see examples in Chapter Two); however there are few studies where co-management has been applied within the context of World Heritage (Hill et al. 2011; Matsuda, Makino & Sakurai 2009; Nursey-Bray 2006; Nursey-Bray & Rist 2008; Zurba 2010). Unlike other studies of co-management in WHAs where issues of returning land rights back to indigenous peoples has led to conflict and contestation (Hill et al. 2011; Nursey-Bray 2006) or where decentralised co-management arrangements already existed prior to WHA designation (Matsuda, Makino & Sakurai 2009), the Kokoda Track area was never designated within an established formal or informal protected area policy. Hence, the governing of natural resources on the Kokoda Track sits within customary landownership practices making it an appropriate choice for the aim of this research.

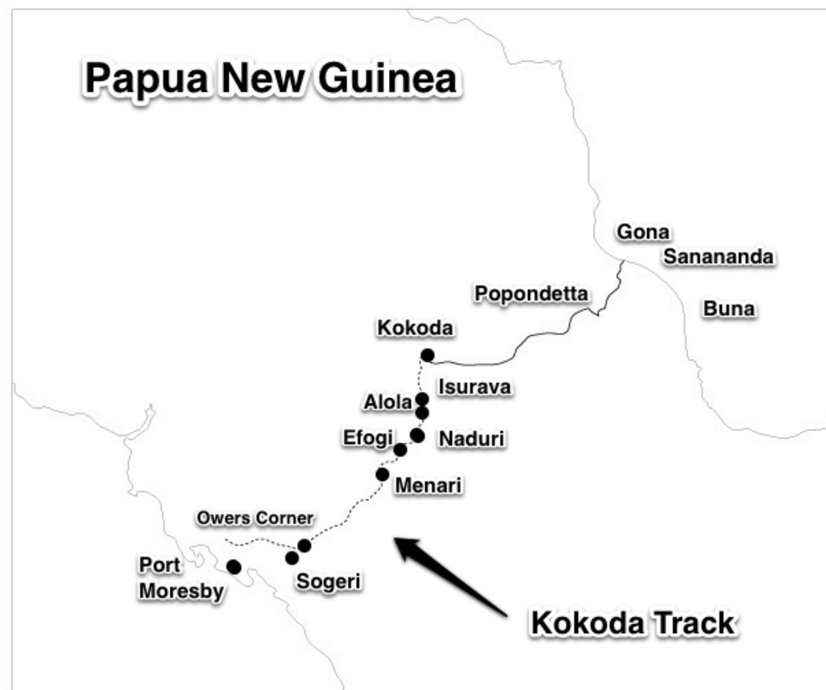
3.4 Conducting the Study

Many authors offer diagnostic and evaluative research on co-management arrangements (Pinkerton 1989a; Pomeroy, McConney & Mahon 2004). Some scholars provide conceptual and method-driven research on co-management arrangements (Carlsson & Berkes 2005; Plummer & Fitzgibbon 2004). Fewer focus on the initial stages and organisation of stakeholders in co-management arrangements (Chuenpagdee & Jentoft 2007). This study builds on the work of Carlsson and Berkes (2005, p. 66) who identified that co-management, understood as an approach to governance, can provide a framework for understanding the 'network of relationships that often form sophisticated management systems'. In particular, this research will provide a mechanism to

operationalise Carlsson and Berkes (2005, p. 73) first step in their six step scheme, which is to 'define the social-ecological system under focus'. To achieve this, Berkes (2008) conceptualisations are organised into a mechanism to explore and explain existing governance and relationships that guide collaboration at local, regional and national levels.

It is necessary to define the Kokoda Track for the purpose of this study; while it is acknowledged that stakeholders define the Kokoda Track differently, the development of tourism has largely influenced the definition of what the Kokoda Track is today and therefore is used to delimit this study. While there are generally accepted boundaries (detailed in Chapter Four: Part 2) of what constitutes the Kokoda Track, stakeholders define the region in terms of their own values and interests in the area. Some stakeholders insist the Kokoda Track is only one track that Australian soldiers walked during the battles in WWII. Other stakeholders argue the Kokoda Track is a series of tracks that include surrounding villages and that stretch from coast to coast. For the purpose of this research however, the Kokoda Track, as most commonly walked by tourists, from Owens Corner to Kokoda limits this study; the dotted line (see Figure 2) represents this 96km track and is referred to as 'the Track' by participants in this study. The following map has been constructed to demonstrate the location of the Kokoda Track as it is understood for the purpose of this research. While there is not only one path, the route depicted overleaf demonstrates key villages often used by tourists as overnight stops on route.

Figure 2: Map of Kokoda Track



Delimiting the study to a defined 'Track', provided the targeted use of secondary data to identify key stakeholders to be involved in data collection. Based on secondary data and the literature review, five key stakeholder groups were identified to participate in this study, they included:

(1) customary landowners (or 'local communities' as they referred to themselves as)
(2) the local management authority (Kokoda Track Authority)
(3) government representatives (of both PNG and Australian)
(4) non-government representatives
(5) tour operators.

These five stakeholder groups were either based along the Kokoda Track, in PNG's capital Port Moresby and/or in Australia. Customary landowners and community members were interviewed in the villages along the Track. The remaining participants from other stakeholder groups were interviewed in either Port Moresby or in Sydney, Australia.

The villages that were asked to participate in this research lived on or close to the Kokoda Track and came into frequent contact with tourists. While it was not possible to have all of the villages participate in this study due to restrictions on time and resources, the villages marked with a dot on Figure 2 represent where data collection took place during fieldwork. Table 6 below shows the coverage of the data collection, including the total number of participants per stakeholder group by village/city. Informal interviews ranged from 30-90 minutes in length.

Table 6: Total number of participants by location

Location	Participants by Stakeholder Group
Port Moresby	7 x Government Representatives (3 x *local* / 4 x *non local*) 4 x Management Authority Representatives
Sogeri	1 x Community Representative
Manari	2 x Community Representatives
Efogi	3 x Community Representatives
Naduri	2 x Community Representatives
Alola	2 x Community Representatives
Isurava	1 x Community Representative
Kokoda	1 x Tour Operator (Local Operator)
Sydney	1 x NGO Representative, 1 x Tour Operator (International Operator)

3.4.1 Contextualising the Study

Conducting research internationally, and specifically in PNG, came with a large number of contextual considerations for the researcher. PNG, and in particular the capital Port Moresby, has a poor reputation in the international community with regards to safety and personal security. The Australian Government's warning for travel to PNG at the time of fieldwork (February, 2012) was to exercise a high degree of caution. In response to this warning, the decision was made by the researcher and supervisors to engage the support of a non-government organisation (NGO) to travel to PNG. This decision provided the researcher with two key advantages. Firstly, the local knowledge, experience and staff of the NGO could be used to construct a culturally appropriate methodology that was achievable, and secondly, that the personal safety of the researcher would be greatly enhanced by travelling with the NGO team and working within their long-established networks. The Kokoda Track Foundation (KTF), a Sydney

based NGO working on the Kokoda Track with both Australian and PNG staff based in Sydney, Port Moresby and on the Kokoda Track was engaged and consequently supported this research project. The researcher travelled with the KTF on their annual auditing trip in February 2012. The KTF supported this research in kind by supplying all land costs associated with the fieldwork. While conducting the fieldwork, the researcher volunteered time outside of data collection to assist with the KTF's philanthropic work along the Track.

3.4.2 Role of the Researcher

The author's personal philosophy and cultural perspective has been shaped by her background as a young Anglo Australian woman. It is understood that this investigation is located within a perspective shaped by my background, race and gender. It is also shaped by my previous research and experience with PNG Nationals based in rural and remote villages and those working and living in urban parts of the country. This means that my personal experience of collaboration as well as my belief that customary landowners should play a central role in their own self determination and resource management was brought to bear on the research. The researcher was therefore consciously aware of these biases and reflected on the possible impact of these during each aspect of the research process, trying to ensure that participants guided the direction of the interviews and were given the opportunity to state in their own words what was meaningful to them. However, I recognised that as a white, English-speaking, young woman, my interpretations and construction of "others" might be seen as coming from a position of power or prejudice. The decision to work with a well respected NGO (the KTF) was made in order to help minimise some of these issues.

As a part of the research process the researcher developed a number of relationships with the research participants making commitments to confidentiality which was maintained throughout the process. As a part of maintaining good practice the research objectives, goals and findings were shared with research participants. The researcher was also mindful and careful throughout to prevent the research participants and the various community groups they belong to from experiencing distress, discrimination or increased levels of prejudice caused by ignorance and cultural insensitivity. To ensure these goals were met, time was invested in developing rapport with participants, some

of whom the researcher had met previously. The researcher also decided that the most appropriate way to conduct interviews with customary landowners and local communities was to walk to and be invited into their community.

Within social science research, it is important to situate the researcher and outline the researcher's epistemological approach and this was explained to the research participant's. In addition, specific to this case study and research in PNG and along the Kokoda Track, it is important to articulate the researcher's *licence to practise* (the licence to practice will be explained in more detail in the following paragraphs) and how that influences the methodological approach and the study more generally.

The unique nature of conducting research on the Kokoda Track comes with specific rules in the manner of engagement, particularly when dealing with the multiple levels of stakeholder groups. As detailed in a discussion with a participant during fieldwork 'you don't know anything about the Track unless you walk it' (Tour Operator 1). This idea of the *licence to practise* or work along the Track was also informed by an NGO working in the field. A representative from the organisation explained that the local people will respect you after you have walked the Track, and walked in their shoes. This sentiment was also strongly conveyed in an interview with a participant who works for the local management authority, the Kokoda Track Authority. He believed communities respect you when you walk in, just like they do everyday. This idea of a *licence to practise* in the field was influential in determining the fieldwork component of the research and a process that was required in order to gain respect from stakeholder groups.

As outlined in Chapter One, a *licence to practice* on the Kokoda Track needs to be earned, and I was advised by previous researchers (Pers Comm. S. Wearing, G. Nelson, S Grabowski) and the supporting NGO that walking into communities was an important first step in building rapport, earning respect and building trust with participants from villages on the Kokoda Track. Therefore, the fieldwork was planned around my personal crossing of the Kokoda Track on foot in conjunction with the KTF. In summary, care was taken to ensure that I maintained the ethical standards set out in the ethics application including sensitivity and confidentiality, and the sharing of research findings with the participants.

3.5 Research Methods

Multiple data collection methods were used in order to capture the multi-dimensional and complex nature of the phenomena under investigation and to ensure that rigour was employed in the process. As Creswell (1998) attests, in order to employ rigorous data collection procedures, researchers must collect multiple forms of data. Yin (2003) concurs, articulating that the strength of a case study is the ability to use a variety of evidence, from documents, interviews and observations to help tell a story. Secondary data was first used to understand the contextual considerations of conducting the study in PNG and specifically on the Kokoda Track. Fieldwork, or primary data collection, consisted of in depth informal interviews, a focus group and observations while trekking on the Kokoda Track.

Fieldwork was conducted in PNG and in Australia between February and April 2012. The expedition to PNG was carried out in conjunction with the annual auditing trip of the KTF who has been working on the Kokoda Track since 2003. Fieldwork in PNG included two weeks on the Kokoda Track and an additional week in Port Moresby in February 2012. Final interviews were conducted via Skype from the researcher's office or in person in Sydney.

3.5.1 Interviews

'The interview is probably the most widely employed method in qualitative research' (Bryman 2008, p. 436). One of the assumptions that underpins qualitative interviewing according to Patton (2002, p. 341) is that 'the perspective of others is meaningful, knowable, and able to be made explicit'. In this case, the interviews were informal and in-depth; this method was 'initially developed by anthropologists, but has been adapted by sociologists' (Veal 2006, p. 40) and is considered suitable due to the nature of this research which focuses on social relationships in natural resource management. Unlike other studies in the case study region which have focused on more quantitative research methods (Carlsen 2012) or used a mix methods approach (Grabowski 2007), interviews were deemed most appropriate for the study in order to provide better access the voice

of the locals; this is something advocated by Wearing et al. (2009). A copy of the informal interview schedule can be found in Appendix A.

The interview schedule was drafted based on themes that stem from the direction of the thesis; to explore co-management as a concept to explore collaboration in the context of World Heritage. The themes of landownership, the natural environment, communication and relationships are considered broad and were designed to allow participants to guide the conversation and discuss their perceptions in relation to these themes. The questions were only a guide, as the informal interviews did take their own course and participants did reflect in many ways on all four themes.

Individual interviews were conducted with 18 participants. Interviews that took place along the Kokoda Track with customary landowners and local communities were approached in a different way to other stakeholder groups and will be discussed here first. A verbal message was sent through the KTF network a month prior to fieldwork in order to let villages know that a researcher was going to be passing through their village and hoping to conduct interviews. Upon arrival into villages, the process of participant recruitment was conducted through a community consultation process that is appropriate and commonly accepted within both Koiari and Orokaiva cultures. This process included the researcher explaining the purpose of the research to the community leaders, with the assistance of a cultural interpreter/translator, and a request for one or more interviewees to participate in the study. Following this, community leaders and elders held a communal nomination process (without the researcher or cultural interpreter present) to determine if they wished to participate and who would represent the views and voices of the community. Commonly, the person nominated was an elder or landowner in the village. This process was conducted on the advice and experience from the KTF and the extensive experience of the lead supervisor of this thesis.

Interviews on the Kokoda Track varied in length; some lasted 30 minutes while others lasted 90 minutes. Interviews were conducted in central places in the villages, such as the local primary school or the local church. The language of instruction in PNG is English, therefore all business, government and schooling is completed in English. However, cross-cultural interviewing 'adds layers of complexity to the already-complex

interactions of an interviewer' (Patton 2002, p. 394). Therefore, to assist the researcher with bridging cultural barriers, a cultural interpreter/translator was present at all of the interviews that were conducted on the Kokoda Track. The interpreter/translator was a local Papua New Guinean with experience in assisting researchers and working with non-government organisations dealing with customary landowners specifically in this region. The purpose of the interpreter/translator was to assist with any language barriers, to help clarify meaning and to ensure the participants were comfortable that their thoughts were been accurately conveyed. Interviewees were asked if they wanted the interpreter/translator present, and all said yes. The interpreter/translator also assured informed consent was gained from participants on the Kokoda Track by translating verbal consent agreements into local languages where necessary.

Interviews that took place off the Kokoda Track (in Port Moresby or in Sydney) took a slightly different approach. These interviews were conducted with participants that had high levels of English skills and consequently no interpreter/translator was required. These interviews lasted between 30-60 minutes. Off Track interviewees were briefed on the nature of the research and signed a consent form[7] in line with the ethics approval process. All interviews were recorded and transcribed.

3.5.2 Focus Group

A focus group was conducted in Port Moresby as a part of the fieldwork. As a popular data collection technique in applied social research (Robson 2011), the aim of the focus group is similar to that of the individual in-depth interview except that the participants have the opportunity to interact with other participants as well as the researcher (Veal 2010). The purpose of using this process was to allow the interaction/discussion process to occur between the participants, subsequently providing in-depth information to the researcher about the participants' experience, knowledge and understanding of current efforts in collaboration between stakeholders. The focus group method was selected as it enabled in-depth discussion on an area of interest that allowed multiple participants to discuss the topic in greater depth.

[7] The information sheet and consent form can be found in Appendix B.

The focus group consisted of seven participants from the government stakeholder group. Six of the participants identified as employees of the Department of Environment and Conservation (DEC, a PNG government agency) and one from the Department of Sustainability, Environment, Water, Populations and Communities (DSEWPaC, an Australian government agency). Although six identified as employees of DEC, it was made known to the researcher that three of the employees were Australian and were employed by DSEWPaC on a contract to DEC. In the focus group, there were four Australian participants and three PNG Nationals (these are identified as *local* and *non local* throughout this thesis). Participants volunteered to participate in the focus group and this cross section of experience and nationality provided a highly useful discussion of issues and the sharing of values and worldviews between participants and the researcher.

The focus group process was informal, involving the researcher facilitating the group as a discussion leader with a guiding role, ensuring that all aspects of the topic were covered. In the focus group situation the researcher/convenor had the role of ensuring that all group members participated and that the discussion was not dominated by one or two participants. The focus group provided the opportunity for individual perspectives to be voiced, and then for the group members to discuss and interpret the issues collectively. The focus group was conducted at the DEC offices in Port Moresby in one of the department's boardroom. The researcher briefed the participants in the same way as the individual participants were briefed. The same consent forms and interview schedule used in the individual interviews was used. In the session, the discussions were tape-recorded and subsequently transcribed.

3.5.3 Document Evidence

The use of documents[8] allowed the researcher to acknowledge the case's peculiarities, its history and future expectations (Stake 2000). In the case of the Kokoda Track, the few previous research studies as well as government reports written on this case have been used to provide an understanding of the complex history of the region as well as

[8] Documents analysed in this study included policy documents, annual reports, media releases, newspaper articles, websites and DVDs, all of which added further evidence for the case study. The documents were collected over the period 2011-2013.

understanding the direction some stakeholders have for the future. The literature (primary and secondary) provided a sounding board of ideas which underpinned or supplemented findings from the interviews and focus groups (Denzin & Lincoln 2005). For researchers such as Silverman (2010) the use of such 'naturally-occurring' data, such as government reports and other forms of document evidence, which avoids the intervention of the researcher in an artificial environment, is a valuable source of evidence to the qualitative researcher. Thus the collection and analysis of documents had certain advantages over other methods employed in this study in that they were unobtrusive, non-reactive and was a record of actual rather than perceived behaviour.

Documents used in this case study were predominantely collected from and about government stakeholders, both in PNG and Australia. Annual reports of the Kokoda Initiative (Department of Environment and Conservation & Department of Sustainability, Environment, Water, Populations and Communities 2012), newsletters (Department of Environment Water Heritage and the Arts 2010), and policy reform discussion papers (Department of Environment and Conservation 2011) were all used to help create a picture of the whole in regards to the work of both the Australian and PNG governments. It is noted however that these documents may involve self-reporting and therefore alone may not be considered valid sources of evidence in some regards. While external documentation (government reports in particular) which are available to the public are sources of accountability, they may also act as publicity and marketing vehicles and they can provide information as to the perspectives and priorities of government stakeholders. These documents, as well as the media articles, were obtained from the Internet, forums and from participants themselves and used to help shed light on collaboration and co-management processes at work within the government stakeholder groups and between other stakeholders in this case study.

3.5.4 Data Analysis and Presentation

Data analysis was an on-going iterative process from the initiation of data collection to the completion of the study (Veal 2006). The aim of data analysis is to make primary data 'readable' for subsequent scrutiny by the researcher. The analysis of qualitative research is undertaken by coding and categorising patterns in the data, and eventually identifying themes. In this study the individuals' stories, as recorded in the interview

transcripts became the primary units of analysis along with the discussion in the focus group. To achieve a high level of familiarity with the data, memos, notes and transcripts of the interviews, focus groups and documents were read and re-read. The initial coding of the data was shaped by emerging concepts, themes and sub-themes. In line with the interpretive paradigm underpinning this research, the themes of this research were therefore not completely imposed by a pre-defined matrix derived from the review of the literature (Denzin & Lincoln 2005).

Coding describes the developing and refining of interpretations of data, and can take on two forms: open and axial coding. Open coding was carried out first and involved assigning the initial set of open codes to interview/focus group transcripts. Axial coding followed and involved the redefining of initial open codes, with each becoming more clearly defined. Axial coding focused on the organisation and re-arrangement of the existing codes and involved splitting codes into sub-categories, identifying relationships between codes, or combining codes that are closely related (Willis 2006). The computer software program used to support the coding and data analysis process was NVivo, which assists with the integrating, shaping, coding and 'understanding' of large quantities of qualitative data (Veal 2006).

Once analysis and coding of the data was complete, the process of writing up findings began. Findings and discussion are presented thematically in Chapter Four. The organisation of Chapter Four into three parts reflects how the findings influenced the building of a mechanism to understand adaptive co-management in this case study. The decision was made to write the findings of this research in the passive voice, or the third person. While some argue that this approach portrays the idea that 'no human being is visible in this writing' (Patton 2002, p. 265), this was a strategic decision. The researcher acknowledges and agrees completely with Patton (2002, p. 264) in that the qualitative inquirer is part of the context; 'a real, live person makes observations, takes field notes, asks interview questions, and interprets responses'. Yet, the researcher made an active decision as she felt that by using the passive voice, the voices of the participants would better stand out.

However, to acknowledge that the data in most cases represents the voice of the participant and the researcher, a method of data representation called vignettes was chosen to create an enhanced space for these voices. Vignettes have commonly been used as data collection methods in health and medical research but are now being advocated within social science as a data representation tool. Specifically, Blodgett, Schinke, Smith, Peltier and Pheasant (2011) suggest that vignettes are an effective way to present Aboriginal stories in their 'own words' and ensure the voice of those who participated in the research is heard. This approach is considered as a culturally inclusive way of presenting stories. Blodgett et al (2011) used the approach of vignettes as a method of recognising the relationship between the researcher and the participant as co-authors of the information.

In this case study, four vignettes were crafted. The vignettes are reflective stories by the researcher. The stories are based on four participants in this study; 1 x local community member, 1 x government representative, 1 x one local management authority representative and 1 x tour operator. The material for the vignettes were selected from interview transcripts and based on data analysis. The vignettes are written in the first person to represent the researcher as part of the story telling process (Blodgett et al. 2011). The vignettes are presented throughout Chapter Four and have been de-identified (as per the ethics approval for this study) and pseudonyms assigned.

3.6 Potential Bias

Patton (2002, p. 570) astutely remarked that 'value-free interpretive research is impossible'. Patton, along with Denzin and Lincoln (2005), acknowledge that as qualitative research is ideologically driven, every researcher brings pre-conceptions and interpretations to the problems being studied, regardless of methods used. Personal bias is acknowledged in this study due to the researcher's previous involvement with another research project that was conducted using the same case study region. The researcher's previous study on the changing role of local communities in protected areas has changed her views with regards to the role of stakeholders within this region. Some of the conversations with participants in this study may also have influenced the researcher's personal perspectives, particularly as the researcher has experiences working within the region and with some of the participants in a previous research

project by reaffirming the researcher's bias (Bott 2010). However, the researcher took every effort to ensure that personal views, beliefs and assumptions were not imposed upon participants during the data collection process, and that themes derived inductively from the analysis of data were not pre-determined.

3.7 Ethical considerations

An application for ethics approval was made to the UTS Human Research Ethics Committee, which was approved on 17 January 2012 (Ref No. HREC 2011-469A). Detailed information about the purpose of the research was provided to all participants. Included with this information were the contact details for the thesis chair supervisor—Associate Professor Stephen Wearing—along with the Human Ethics complaint number and the researcher's own contact details. Additionally, a local independent contact person located in PNG was engaged in case participants wished to confirm the researcher's identity or express any concerns as requested per the UTS Human Research Ethics Committee. He is well known within the communities on the Kokoda Track and his details and role as an independent contact was explained verbally to all village-based participants. After collection all of the interview and focus group data was stored in an alarmed building, in a locked filing cabinet, and on a personalised, password-protected PC hard drive in a private office. Transcripts of in-depth interviews have been coded to ensure participant anonymity.

A final ethical consideration for this research was the involvement with the KTF. The KTF has strong relationships in the fieldwork region, and safety and security measures designed for all members and volunteers working with the Foundation were followed. A contractual agreement was signed with the KTF to ensure privacy and confidentiality of any information the researcher came into contact with while volunteering. Conversely, the KTF had no involvement in the collection and analysis of data as they themselves represented one of the key stakeholder groups in this research. The participant who was selected to represent the NGO stakeholder group in this research was a staff member that had no involvement in the data collection process with other participants and did not know who else would have or would be participating in this study. No KTF staff members that travelled with the researcher on the data collection fieldwork crossing of

the Kokoda Track participated as an interviewee in this study to ensure the anonymity of other participants.

3.8 Summary

This chapter has outlined the research design that was used to guide and shape the collection of data used in this study. The chapter also explained the data collection and analysis processes. Particular emphasis was drawn to the context of the study and the role the researcher played in each step. The chapter concluded by acknowledging the potential bias of the researcher as well as ethical considerations. The study now moves to a discussion of its findings, which is presented in the following Chapter Four. This chapter is divided into three parts and will present the collected data and patterns of results and discussion.

Chapter Four: Findings and Discussion

This chapter presents the results and discussion based on empirical work completed on the Kokoda Track case study. The chapter is structured into three parts: local, regional and national management. This structure emerged from the data analysis process, primarily through participants self-identifying collaborations. These stakeholder classifications are also common in the literature on World Heritage (Su & Wall 2012). The organisation of social actors into distinct levels of management aids understanding of what is being managed, how it is being managed and by whom. This structure also facilitates theoretical discussion in the final chapter which is focused on recognising linkages across and between these levels for the purpose of exploring co-management.

It is important at this point to again note that the way in which the Kokoda Track is defined varies between different stakeholders. The values and motivations of stakeholders differs, and this has resulted in stakeholders using different terminology when defining their area of interest. For example, the terms the *Kokoda Track*, the *Kokoda Region* and the *Kokoda Catchment* are all commonly used to refer to this region. However, to define the research in this thesis, and focus on one particular resource as Carlsson and Berkes (2005) state is the first step in researching co-management. Focusing specifically on the boundaries of the Kokoda Track achieves this to some degree by a providing a central area where multiple stakeholders interact. The path used as a tourist route therefore becomes the action arena (as outlined in the map in Chapter Three Section 3.4). In this research, participants commonly referred to this defined arena as the *Track*, therefore that is how the arena will be referred to from this point forward in this thesis.

This chapter also uses differing terminology than the terminology used in the first half of the thesis. Chapter One outlined the differences between *local residents* and *resource users* (Footnote #1 p. 1) for the purpose of reviewing and synthesising literature from protected area management and natural resource management. These terms were preferred over the more common and generic term *local communities* as they aid articulation of the relationship between people and the environment. In the following two chapters, where context is important, the terms used by the stakeholders themselves

will be adopted. Research participants used the term *local communities* to describe themselves or the people who live along the Track. As a point of differentiation, the term *landowner* or *customary landowner* was often used in interviews by participants to distinguish resource owners from resource users; effectively engendering decision making authority and power asymmetries in the village. In line with the terminology that arose from the data, from this point the following terms will be used:

- local communities or communities: the people of the Track
- landowners or customary landowners: identified resources owners who, through community-based legal systems, own the physical land of the Track
- local level stakeholders: general reference to include all communities local or otherwise (on or off the Track), landowners or otherwise who have a stake in the use and management of the resources of the Track.

The chapter will begin by presenting the findings on local level stakeholders and their management of the Track.

4.1 Part 1: Local Management: Customary Landownership of the Track

Chapter Four Part 1 presents findings on local level stakeholders and their processes for managing community life and natural resources for subsistence living on the Track. This part begins with a discussion of property rights and the customary landownership of the Track. Customary landownership is enshrined in constitutional legislation in PNG and therefore has a role to play in the empowerment and self-determination of local communities and their management of natural resources. Following this, the Koiari and Orokaiva communities, the two cultural groups who inhabit and own the Track (Nelson 2007), are discussed and the process of community management of the Track is presented.

4.1.1 Legislation and who owns The Track?

> At the moment there's a lot of talk about the Track but like, that certain areas that are owned by the landowners not the government or anybody, any other organization. (Naduri Representative 1)

Complexities regarding property rights, ownership or tenure of land exist across the globe. Some of these property rights predate political constructs of land rights and claims and can often be the cause of much tension between communities and the government or the State. In some cases, despite the property right's existence before the establishment of State land, local communities have been forced to apply for traditional land rights to be returned and (in some cases) thus granted by the State (Lynch & Alcorn 1994)[9]. However, in this case, the communities of the Track have and continue to hold constitutional rights in terms of customary land tenure or landownership (KTA

[9] The notion of ownership, specifically legislated ownership of land in World Heritage Areas, is an issue that authors often dance around in the heritage management literature. The literature presents case after case of contestation between indigenous people and land rights within a heritage and World Heritage context, yet few of these cases deal with local communities who have, and always have had, legislated landownership rights. The classic case of land rights and heritage management in Australia (Davis & Weiler 1992; De Lacy & Lawson 1997; Reid et al. 2004) is often discussed as exemplar in demonstrating the increasing role of indigenous communities in land and heritage management in conjunction with the federal government. However, political tension prevails as the process of returning land rights and management decisions to indigenous communities, is often premised with contractual agreements to joint management with governments. This study, however, is concerned with the role of legislated landowning communities, with no political history of colonial disenfranchisement from customary land rights, and their current role in land management decisions in preparation for a possible World Heritage nomination.

Chief Advisor). This community-based legal system of property rights provide a security net for local communities (Weiner & Glaskin 2007) and may potentially play an important role in the face of development as a consequence of the increasing profile and changing nature of the Track as a tourism destination.

In PNG, there is a significant difference in terms of property rights and traditional landownership from other countries (Weiner & Glaskin 2007). The land tenure situation in PNG is particularly favourable towards local communities (Lea 1993). Land in PNG is held under traditional customary ownership; where clan based groups govern resources. Customary landownership was reinforced in 1975 during independence when the constitution was created and today, despite the political debate presented in section 1.2, the Department of Environment and Conservation (2011) considers the majority of land in PNG to be held under customary title. Unlike other cases presented in the literature review, the legislation in PNG suggests decision making authority and empowerment of local communities which potentially ensures the benefits of development projects on their land are received.

However, customary landownership practices and property rights of the Track are not as simple as the legislation outlines. Property rights and the nature of customary ownership is complex as, in most cases, land registration has not been completed in rural parts of PNG (Weiner & Glaskin 2007). Despite this lack of knowledge at the government level, local communities understanding of property rights became clear in the interview process. Data collected in this study suggests that diverse cultural groups share land boundaries. Although boundaries of creeks and groups of shrubs appear ambiguous and arbitrary to the researcher, land boundaries were described as dynamic and understood through rhetoric between communities:

> from where I live and down to the end of the airstrip that's my land. And this drain here, this small creek flows here that's the boundary. This side is not my land, that is my land. (Manari Representative 1)

Some community members interviewed in this study often hurried through discussions of land boundaries and questions on the precise divisions between landowning clans in their respective villages. The focus instead for community members was on explaining

the relationships between each other in relation to the particular tracts of land in the village. Bromley's (1997) argument on property rights is relevant here where he believes the focus should be on relationships, not resources; the focus on rights between me and others with respect to the property. Accordingly, findings on landownership of the Track emerge and are presented based on discussions about relationships between communities and other stakeholders in relation to the land of the Track as opposed to a focus on identifying key customary landowners and land boundaries where data may not be accessible.

Community representatives, some of whom identified as landowners, spoke about their land in reference to physical natural boundaries as a point of reference between intra and inter community relationships. Some examples of how land boundaries and ownership were discussed are:

> In here, we, this is someone's land but our real land is where the battlefield is…a small creek going down and battlefield and upwards to Alola and up to Eora Creek that's where our land is. We used to go there. But this is someone's land we still live but they authorise to live here. (Isurava Representative)

> In Naduri we have a three clans, so the other clan like at the moment, the clan leaders and the members they own different areas around here and also in the bush we have areas there. (Naduri Representative 1)

> We share the certain boundaries among the clans, so we got six clans. So that's the traditional boundaries…trees and rivers, creeks and these things. (Sogeri Representative)

The community perspectives of landownership and the way in which they define their land begin to contextualise the complex and dynamic nature of customary landownership of the Track. With individual and communal based landownership complexities, and the sharing of land between different family clans, the role of community-defined leaders or elders plays an important part in understanding how land use decisions are made.

In an attempt to identify landowners through ancestral lineage and to pursue development and conservation projects on the Track, the PNG Department of Environment and Conservation (DEC) is conducting a social mapping exercise. As part

of the Kokoda Initiative[10] the social mapping study of one of the cultural groups, the Koiari people of the Track, is underway with the purpose of identifying decision making individuals in the community by defining customary land rights. Interestingly, the anthropologists Weiner and Glaskin (2007, p. 5) argue that 'mapping indigenous ownership of land is part and parcel of a more general attempt by western governments to define and "manage" their own internal indigenous relation to land'. The DEC justifies use of the information from this social mapping exercise to 'provide a resource for community planning and the appropriate targeting of social development programs, assist with management of biodiversity conservation and assist with cultural heritage management' (Kaitokai, 2012). At this stage there is no evidence to suggest that the findings of the social mapping study will be used by the PNG Government to rectify the lagging land registration. However, previous studies in environmental law in PNG suggest the highly sensitive nature of land registration needs to be carefully considered in any cultural mapping of land rights (Telesetsky 2001).

The DEC social mapping study is being carried out by collecting oral histories of the communities of the region, and by documenting ancestral lines to assist in determining land owners, the makeup of the community groups and legal entities of the Track (Kaitokai 2012). Some preliminary study results were delivered at the Kokoda Initiative forum in March 2012 stating that up to 75% of Koiari people are absent from the community. According to Kaitokai (2012), the DEC program officer for this project, 'the principal factors driving emigration include weak income generating prospects, lack of health services, poor access to primary schooling and lack of access to a high school' in the villages. It is unknown at this stage when the social mapping will be complete and if the results will be publicly available, however, the information will provide insight into customary landowners and decision-makers for the Department.

While the land of the Track is currently unregistered, it is commonly accepted by DEC that the legislated ownership of the Track and decision making power remains with communities. Conversely, political discussion suggests that there are other influential

[10] The Kokoda Initiative is a joint PNG and Australian Government program led by the Department of Environment and Conservation in PNG and the Department of Sustainability, Environment, Water Population and Communities in Australia for the purpose of sustainable development of the Track and surrounding area.

players to consider in a debate of ownership and the planned development and protection of the Track. The opinion of some indicates that controversy regarding the potential Mt Kodu mine (located on and around the Track) and the manner in which the Frontier Resources bid was rejected was influenced largely by Australian politicians[11]. With an increasing social awareness of the Kokoda Campaign of WWII and the significant increase in the number of trekkers coming to the area since 2000, Brawley and Dixon state that:

> Australians assert a sense of ownership that is not based solely on a desire for the site's preservation because of sacrifice and loss endured in war. Kokoda was once Australian territory and this colonial legacy continues to shape the ways Australians engage with the Trail (2009, p. 25).

As discussed by Brawley and Dixon (2009), there is a sense that Australia had much more to do with the termination of the bid to mine than publicised. Fundamentally, there is a line of questioning as to what role the Australian Government and the people of Australia have in the land use decisions of the Track[12]. This point will be discussed again in Part 3.

As discussed in this section, the communities of the Track hold the legislative decision making powers in relation to land use of the Track. While land registration with the government is currently lacking, DEC's social mapping exercise will begin to help identify customary landowners and decision makers for the purpose of planning development of the Track. However, it is often other key stakeholders that can influence land use decision making, taking the role away from the legislated landowning communities. A case in point is the example of the Mt Kodu mine where there were numerous outside organisations claiming to be speaking on behalf of the local communities, such as the World Wildlife Fund for Nature (WWF), numerous Australian tour operators and the Australian Government (Brawley & Dixon 2009), however, there

---

[11] Frontier Resource, an Australian mining company, put forward a bid to the PNG Government to mine a tract of land within the Kokoda Track region (Wearing et al. 2009). After significant publicity in the Australia media and the political interests of the Australian Prime Minister at the time, the bid was rejected. The PNG Government have stated that the reason why the license to mine was not granted was due to the potential for water and power sources that could be generated out of the region in the future (pers. Comm. Kay Kalim, Kokoda Stakeholder Forum 27th March 2012).

[12] Similarly, these types of questions arose in the development of the WW1 memorial in Turkey as a sign of respect for the Australian soldiers who lost their lives in Gallipoli. Brawley and Dixon (2009) believe that Kokoda has received more publicity than Gallipoli and that Kokoda in general is now far better known.

appears to be no dialogue on this directly from communities. The research in this thesis takes a different approach. This approach considers the representatives that participated in this study, as decided through the community nomination process outlined in Chapter Three, as legitimate voices of communities' views. There is no suggestion that the views of the community representatives who participated stand for all the views of the communities. Nonetheless, by using cultural community nomination processes and working within the dynamic framework of Melanesian land tenure as suggested by Stevens (1997a), the findings from this study are considered a legitimate research technique, one that can proceed without the need to have the mapping of ancestral customary landowners as is suggested by DEC. The next section presents findings and discusses the nature of communities of the Track to help understand how they self-organise into villages and make land use decisions.

4.1.2 Landownership and Communities of the Track

> Relationships with the land are at the very core of the identity and cultural values of the people of PNG. (Wearing et al. 2009, p. 71)

Customary landowners hold influential decision making authority in relation to the development of the Track. It is essential to then understand the communities who live on the Track and who hold traditional cultural connections to the land. The Track communities represented in this study are divided into villages each of which is made up of several family clan groups. Within the villages, decision making is the role of elders or chiefs as they are most often the owners of the land. Insights from the community on conflict resolution in relation to land disputes and also the role of landownership representation are presented and discussed here. These findings elicit a sense of the communities that are at the centre of this case study.

The Track runs across the Central and Oro Provinces of PNG, where the communities of Mountain Koiari and Orokaiva people live. There are some anthropological and cultural studies of these communities dating back to the 1960s (see Barker, McKellin & Iteanu 1991; Crocombe & Hogbin 1963 for example; Goddard 2001). However the results from this study are focused on the communities who now occupy the Track and

their daily lives and connections to the land and other stakeholders. Currently, there are approximately 3500 people living on the Track and in the surrounding region. Each community along the Track is made up of one or more clan-based group that have come together to create a village. Within these clan groups, there exists a chief and/or a group of elders who are the decision makers for the clans. The clans congregate into villages in an informal way and generally live cooperatively, as one Efogi Representative (1) describes:

> people coming new, they want a piece of land to build their house or anything like that we, my family members, we sit together arrange land talk about it and then we give them piece of land to them so that they can come and join us and build their home or house and live with us…

> we lives here we got so, maybe four or five clans living together and you know, some other places I can hear that I can tell you that when they got this so many clans living together they don't cooperate together. They normally hate each others but out here we, we got SDA (*Seventh Day Adventist*) and now we got our religious is SDA so we we cooperate together we live together we live peacefully we don't spoil each other but we…every time we live happily together with each other but when we you know, when they don't tell us and just go and make garden come back we see and we, we tell them why did you do this in our land…you don't get permission and you just go and do this and that and sometimes we you know we get argued about that and we sort it out again and its peace.

These statements begin to elicit the contested nature of landownership and the important role cultural customs play in the organisation of land and its ownership.

Ownership of land represents status in the community and most decisions, certainly resource based decisions, are made by landowners. Decision making operates within the social constructs of the community and group to which the tenure belongs and it is the community that constructs the meaning of tenure and who can influence it (Lynch & Alcorn 1994). The relationship between community participants and their land often dominated interview discussions. The way in which community participants presented themselves was embedded in their relationship with the land. Communities understand who they are and what they own through oral ancestral history; 'we have creeks, mountains… we are told by our grandfathers it was passed from grandfather to our fathers and then now we know…' (Naduri Representative 1). Community members adamantly claimed their ownership whenever the opportunity arose in conversation. Sentiments such as, 'this is our land, this is our resource' (*local* Tour Operator 2) came

through in several conversations with community members. Communities see the land as a constant, as 'always', as the 'jungle will always be there'. Some of these ideas are concurrent with Eaton (1997) and that of anthropological findings on native title and the people of PNG (Weiner & Glaskin 2007). Govan (2009, p. 21) goes further suggesting 'customary processes still remains one of the main components of ethnic and national identity'. As evidenced here, customary landownership is more than just rights: it provides a framework for operational activities, including the allocation and reallocation of land and resources to groups and individuals, 'conflict-resolution mechanisms and strategies of varying effectiveness for defending the local resource base against incursions by outsiders and intracommunity disputes' (Lynch & Alcorn 1994, p. 374).

Landownership in PNG is often contested and land is the cause of most disputes along the Track (Naduri Representative 1). Landownership disputes remain one of the biggest hurdles and causes of law and order issues in contemporary society (Department of Environment and Conservation 2011). Conflict between communities over land boundaries and benefit sharing has become more visible since the development of the tourism industry and the publicity that it generates. Community rivalry as a consequence of conflicts in tourism development has resulted in periodic closures of sections of the Track (KTA CEO, KTA Chief Advisor). The consequences of Track closures in this case have led to negative publicity in tourist generating regions, having a direct impact on tourists' numbers (Tour Operator 1). While community decision making structures and cultural traditions often contribute to land disputes, recent conflict as a result of tourism development has been mediated by the Kokoda Track Authority (KTA) staff members and consequently, closures of the Track have been much less frequent.

Community representatives raised land conflict resolution strategies as a method of explaining the social structures within the village, stressing that decision making traditions help resolve intracommunity conflicts within the village.

> The setting the village, it's just normal like, but normally, like when we have arguments amongst the villages we normally sit together and then like, there are leaders, chiefs in the village who normally come and get up the people together and then that's how they to solve the problem. Then we shake hands and then that's it. (Naduri Representative 1)

In a country as diverse as PNG, other complexities exist alongside contested landownership such as the rural population sprawl and diverse language base. For example, 87% of the population live in rural areas and over 850 languages are spoken in this island nation making it the country with the most languages in the world (UNESCO 2009). The sprawl of Track communities, and particularly the increase in urban drift was a surprising observation of this case study research. A number of community representatives stated that family members have moved from the villages down to Port Moresby. This was often due to a lack of employment opportunities in the village and a general yearning for city life. This is concurrent with the preliminary results from the social mapping project, up to 75% of community members are absent from the villages along the Track increasing the complexities of understanding landownership.

The geographic distribution of community members and specifically those of the Track was originally a concern for this study. However, the use of the community nomination process employed (as described in Chapter Three) ensured that appropriate representatives for the community were selected. This reintroduces the notion of landowner representation that was touched on briefly at the end of section 4.1.1. This issue was specifically raised by *Patrick*, a representative of DEC in the government focus group. *Patrick,* spoke openly about a scenario that he and his Australian Government colleagues faced a few years ago in the formation of landowner committees for the purpose of beginning negotiations for managing the Track. These are some reflections of *Patrick's* story.

Patrick's experience working with landowners

Patrick participated in a focus group that I conducted with several PNG and Australian Government employees in Port Moresby. For many years Patrick has worked for the Department of Environment and Conservation and has been involved in World Heritage and terrestrial ecosystems management for much of his professional career. A local PNG man himself, although not from the Kokoda region, Patrick explained to those present at the focus group that he understands better than anyone the cultural intricacies of working with the rural Kokoda communities as he has been working on projects in that region for a number of years.

Patrick shared a short narrative with the group that day that I would like to reflect on here. A few years ago a group of Australian Government employees working in PNG called a meeting with the landowners of the Kokoda Track. The intention was to get the ball rolling in relation to managing the track and development projects in the region. The landowners of the Track sent family members who live in the capital city to represent them at this meeting. This caused a stir amongst the Australian Government consultants on the project as they felt that 'representation should come from the bush', and were quick to judge the important role these representatives carried. Patrick went on to say that the consultants declined to participate in the scheduled landowner meetings as a result.

Patrick went on to explain to the Australian expatriates that:

> *they (*the landowner representatives attending that meeting*) were representing their relatives along the track. They were the mouthpiece for them. They were the literate ones who could listen and transfer the information to them.*

Patrick described the village-based landowners as 'screened', where:

> *their descendants, living in the cities, doing the, what, screening if you like, doing the screening for their whole people living on site, jealously guarding over their land, brokering for them.*

He expressed that these 'cultural customs' were obvious to him as a Papua New Guinean man himself, yet he expressed his frustrations when his Australian counterparts would not hold discussions with those landowner representatives that day.

Patrick disclosed to me his genuine concerns for the protection of the Kokoda Track that day. He feels that if action isn't taken soon, the region will lose some of the biodiversity and cultural values that he and the department's team has been trying so hard for so long to protect. Patrick also hopes that through exploring genealogical oral histories, through the social mapping program currently underway, that dialogue between stakeholders will improve and progress on protection can be made.

Mercer (2004, p. 470) argues, it is often the case when 'western "experts" seek to impose non indigenous management "solutions", almost always the project fails'. The notion of landownership representation discussed by *Patrick* provides an additional contextual element to this case and adds to the understanding of the complex cultural relationships between these communities and their land. Patrick's story conveys some

of the intricacies of landownership in PNG and more specifically the complexities in this spatially distributed region. Understanding and working within this arena demands a level of cultural and social understanding of the Track landscape. The role of landownership representation in Patrick's narrative is an important characteristic of the nature of dealing with the Track and also sets the scene for the discussion on community management of the Track.

4.1.3 Community Management of the Track

Social structures and processes guide Track management at the local level. The clan based chief system guides land management in the village. Chiefs, who are usually landowners, will often come together with other leaders in the community to make decisions in terms of land use and village development. These customary approaches are common in traditional approaches to management. Ngobese (1994), Boonzaier (1996) and Goodwin and Roe (2001) argue that traditional approaches to land management are embedded in communal responsibility that links culture and nature and therefore need to be understood within specific contexts.

In PNG, 'rights to use land are derived from birth into the group and may be inherited on a patrilineal or matrilineal basis depending on the customary rules and social structure of the area' (Eaton 1997, p. 225). This is concurrent with findings from the study of landownership of the Track. Many community representatives spoke about their ancestral history and how it influences landownership and management in the current communities.

> My grandmother she owns the land here so my grandfather from Naduri came and married a lady from here and she born my father so we live here. (Efogi Representative 2)

> We have creeks, mountains, yes, they're like, we're told by our grandfathers, it has passed from grandfather to our fathers and then now we know where actually what area that we are going to use and then we don't have to go beyond. (Naduri Representative 1)

Marriage and ancestral linkages play a key role in defining where communities are established and upon what land they live. From discussions with community

representatives in this case study, there are also other influences that determine the management of land. Predominately, this is the forming and reforming of villages.

It is through natural resource sharing that different clans come to be living together in the established villages along the Track. The formation and development of villages along the Track relies upon the decisions of landowners. Villages are made of one or more family clan groups that have come to live together and create a larger community and village. When new families come to join a village or development projects are proposed, important decisions rest with the landowners of the village. In some instances, some clan groups have invited other clans, whose land geographically inhibits access to basic services, to occupy land surrounding them and establish a larger village. An example of this was explained to me by *Mark*, who reflected on the nature of village establishment near Sogeri.

Mark's description of the role of traditional decision making in the forming of his village

Mark is a local man from the Sogeri region which is located at the southern end of the Kokoda Track. The name of Mark's village is Doe, and he has lived in that village all of this life. Mark comes from a big family, however, his own family is made up of his wife and three young children who all live in Doe. I felt fortunate to be able to spend quite a bit of time with Mark throughout the duration of my time in PNG, and he spoke to me about his daily life in the village. He and his family are subsistence farmers and grow peanuts, cabbages, sweet potatoes, bananas and a number of other fruits and vegetables. Due to the location of his village, Mark mentioned that a number of community members take their produce down to Port Moresby to sell in the markets to earn a small income.

Mark spoke to me about how his village came to be, and the way in which the different family clans co-exist. The land Mark lives on is his grandmothers and has been passed down the female side of his ancestry lines for many generations. His father's land is located deep in the jungle, and due to limited access he and his family, along with other families have come together to create the village of Doe on his grandmother's land. Doe is made of up six family clans.

> *They got their home lands but because of what I have mentioned, road access and the church and government services and aid posts so we call them up altogether to stay in our land where the road access is.*

I found this idea that different family clans could co-habitat so easily interesting considering all that I had read and heard about land disputes and conflict between landowners across PNG. Mark explained to me that the owners of the land, in this case his family, place some restrictions and guidelines on the use of the land by other clans who have come to reside in the village.

> *The restriction of cutting the bushes, making garden. Told them to just cut the old gardens not to go into the bush and cut new ones…cause they will destroy the environments like trees and river. So making garden we let them to use the old ones, wherever they cut gardens before the trees grows up and they get bigger and they just go and clean the same area again.*

Mark explained to me the negotiation process that is commonly used to bring the different clans together and create a village. He described the situation where the other clans were geographically removed from basic services, similar to where his father's land was located deep in the jungle, and how his family invited the clans to come and live with them and create a big village. When I joked and asked how negotiations take place and if official agreements were signed, Mark laughed and told me they simply sit down under a big tree and begin talking. He said they talk and talk, negotiate and eventually, everyone gets up and starts making garden.

Mark raised in his story the notion that community landowners understood where gardens can be made and what areas of land need to be free from subsistence farming. This issue was raised by other community participants when the conversation veered towards management and protection of the natural environment. One community representative from Manari explained that:

> We love, I love the big forest. Near around our home, we look after the flowers or the trees but the big forest, jungle, you cannot look after it. (Manari Representative 1)

Understanding that the 'big jungle' cannot be managed is a point that came up with other community participants. Another described the continual regeneration of the environment every year, calling it the 'good forest' (Efogi Representative 2), and pointed out that while it is good, it is also a major inhibitor of village development. Unlike people, the big jungle cannot be managed. Each year houses and buildings need to be constantly repaired and maintained. Trying to appreciate how communities understand their relationship between themselves and their land allows the start of a deeper understanding of what is being managed at the community level and what is simply, unmanageable; the 'big jungle'.

Natural resource management and protection at the local level was also discussed with a local tour operator, who herself grew up with her parents on the Track. She believes that some of the traditional ways of managing the natural environment are being lost due to the increasing pressure of population growth and changing cultural attitudes towards natural resources.

> The population is growing in a way that they don't, the gardening, the, the gardening they're doing now is taking too much out of the natural environment not like in our times. So they're making gardens along the river now, that our forefathers, our forefathers knew that we couldn't make garden along the rivers without being taught, whereas the young people, they don't care or don't bother, they just make garden anywhere they like and so the rivers are running wild, freely wherever they want because the trees have been chopped down and the roots are rotten. So it's easy for the rivers to run freely wherever they want. (Tour Operator 2)

This participant was quite upset by these changing land management practices and she emphasised the need for more education for younger people. She believes that education as an alternative to subsistence agricultural will relieve the pressures currently being placed on the natural environment of the Track and its surrounding forests.

While traditional methods of land use management can be seen in Mark's story and through the conversations with other community members, the introduction of western

methods of land management can also been seen through examining local land management for the purpose of tourism. Working with communities on Track management, the Kokoda Track Authority (KTA) established ward development committees that spatially combines communities for the purpose of creating development proposals as a way to funnel tourism benefits back to the people of the Track. There are fourteen wards that are covered under the KTA proclamation (KTA CEO), eight in the Oro Province and six in the Central Province side of the Track (Kokoda Track Authority 2012b). The ward structure represents the spatial grouping of clans and communities positioned alongside one another. The ward system functions in a similar fashion to other political frameworks in PNG, whereby a ward councillor is nominated and votes are counted in the same way as politicians at the provincial and national levels through the national electoral commission.

The ward councillors head up ward development committees to represent the communities. These committees are charged with representation of communities' needs and putting forward ward development plans to receive funding for projects in the villages. The ward structures are similar to the Community Trusts in the case of the organisation of rural indigenous communities in the Okavanga Delta in Botswana (Mbaiwa & Stronza 2010). Community Trusts in Botswana provide a formal platform for the communities to participate in natural resource management and tourism development. The Track ward committees and programs will be discussed later in reference to tourism on the Track. However, understanding the juxtaposition of traditional local management with the ward development committees contributes to a broadening picture of what local level management is in this case.

4.1.4 Summary

Part 1 provided an outline of customary landowners of the Track, explored relationships between communities and land and discussed community management of the Track within the context of land legislation in PNG. It was noted that Track communities define themselves by their relationship with the land; decision making authority and cultural links to the past and future generations are all inextricably linked to the land according to primary and secondary evidence. This is consistent with studies across Pacific Island nations where customary landownership underpins much of the

Melanesian peoples 'sense of identity' (Boydell & Holzknecht 2003; Scheyvens & Russell 2012). This identity is woven into the fabric of community and its interactions with the environment and it is often cultural customs that govern land management at the local level.

On this point, Stevens (1997a) comments that any land managed through custom, religion or traditional law is considered a CPR and is relevant in this case. Congruent with the primary data findings, traditional clan based groups own and manage the land through cultural customs such as the chief system and land can often be communally or individual held at the same time. It is important to recognise the land of the Track as a CPR in this study as it influences management regimes for development and conservation.

While CPRs around the globe have been misidentified as 'open access' resources, based on arguments presented in this chapter (Fingleton 2004; Gosarevski, Hughes & Windybank 2004; Hughes 2004; Stephens 2008) and juxtaposed with the data analysis from this study, the customary land of the Track can be considered a CPR for the purpose of applying appropriate management theories. While some would argue for the pursuit of defining individual property rights and land registration and privatisation, the researcher has made the decision to work within the existing social structures identified in data collection and analysis that guide interaction and use of land. As suggested by Stephens (2008, p. 10), this thesis adopts 'a nuanced and pragmatic analysis that looks beyond ideological constructions of property relationships' to a more context specific and blended approach. Therefore this approach centres on existing land tenure arrangements of the Track and the management of relationships between customary owners and other stakeholders in relation to the land.

4.2 Part 2: Stakeholders in Regional Management: The Influence of Tourism on the Track

The Track, and the multi-scalar stakeholders who are involved in the tourism industry represent partners in regional co-management. The boundaries of this research (as defined in Chapter Three) has meant that tourism emerged as a central theme in this research and the development of eco-trekking along the Track provides the context for exploring co-management at the regional level. Within regional co-management several stakeholder groups operate and each conceptualise the Track differently based on their own worldviews and value systems. These differing values of the Track help set the scene for regional management. The discussion in this part then moves to international tourism operators and their influential role in shaping tourism development on the Track. Then, an analysis of the sustainable development and livelihood projects by tour operators and additional stakeholders will be presented to demonstrate the reciprocal exchange between the use of customary owned lands for the purpose of tourism.

The social consequences of tourism development are now commonly felt in host communities along the Track and this issue will be discussed and analysed to demonstrate that the introduction of a cash economy has had a significant influence on traditional community life. This is important in the context of considering customary landownership as it evolves as a basis for land management of a potential protected area. Finally, this chapter will end with an analysis of existing regional management mediated by the Kokoda Track Authority (KTA). This special purpose authority was established in 2003 to manage tourism on the Track. Although no formal co-management arrangement (legislated or otherwise) exists to manage tourism and stakeholders at the regional level, this chapter helps provide an understanding of how relationships are built and the importance of these relationships in the development of a formal co-management plan for the region.

4.2.1 Conceptualising The Track

The stakeholders involved in this research each conceptualise the Track in their own way. Based on the methodology outlined in Chapter Three, the stakeholder groups that were included in this research were both the PNG and Australian federal government agencies overseeing the Kokoda Initiative (KI), the KTA, the KTF, tour operators and a

number of community representatives. Generally it was found that experiences and worldviews contribute to stakeholder's understandings of what the Track is and what it means in relation to their involvement in the region. Heterogeneous stakeholder groups that operate at the regional level each conceptualise the role of the Track differently, however, commonality among participants rests on the understanding that the *Track* provides the arena for which the communities themselves live and work. As Kothari (2006) suggests, protected areas and their establishment are products of social engagement, and therefore, in this case, before formalising a co-management arrangement, a process of understanding stakeholder values is crucial.

Although the two federal governments are working together on national Track management (through the joint Kokoda Initiative which is explained at length in Part 3 of this chapter), the PNG and Australian Government employees working within the DEC conceptualise the Track differently. One representative spoke about the highly complex nature of the region, identifying 'so many players' and 'so many different aspects' to the Track (*non local* DEC Representative 1) that means that multiple stakeholders in development and conservation projects need to be considered. Another representative spoke about the need for control over the resources of the Track and the ongoing pursuit of formal protection for the region in order to save biodiversity (*local* DEC Representative 1). A further focus group member articulated that he doesn't know how other stakeholders understand and relate to the Track and there is a need for this information to be publicised and shared (*non local* DEC Representative 2). This particular participant said that the PNG Government's challenge in the future is to spend time to understand stakeholders' views of what the region means to them before decision making in terms of a formal protection regime.

Another Australian Government employee working for the KTA commented on how he believes the PNG national government conceptualises the Track in terms of a power and water source for Port Moresby.

> From the PNG point of view, the purpose of the protection is to supply water and power to Port Moresby, so that's why that land's important to Port Moresby and PNG because you've got one source of water and one source of power through Port Moresby and if you spend any time you can see neither of those are well supplied. So if Port Moresby wants to grow, it has to have more water, it has to have more

> power, so providing a protection regime up there that guarantees water quality and quantity. (Chief Advisor KTA)

This participant also commented that the Track means more socially and politically to Australians than Papua New Guineans. He spoke at length about how the PNG and Australian nationals understand the Track differently and explained that the people of PNG don't hold emotional ties to the region as Australians do. To them, he believes, it's simply another trade route as it has been for hundreds of years. To this end, he articulates that:

> most Papua New Guineans wouldn't even know what it (*the Track*) is, and if you speak to Papua New Guineans and you ask about the Kokoda trek, oh yeah it's, that's Australia's thing it's not a PNG thing. So to expect PNG to invest serious money into the ongoing maintenance and management of the Kokoda Track is just not going to happen. (KTA Chief Advisor)

Importantly, this KTA representative is also highlighting another issue of sustainable financing for the Track, a responsibility that he believes belongs to Australia considering there is a much greater association between the Australian people and the war than there is within PNG. He believes the Australian Government needs to make a commitment to financing projects and the sustainable development of the Track and the tourism industry due to the significance of the Track to Australians (KTA Chief Advisor).

An Australian-based NGO working in the region conceptualises the Track as the glue that keeps the strength of the Australian and PNG relationship together, the relationship that was established during WWII. This association between the Track and the Australian people is a notion that is represented in the mission statement of the Kokoda Track Foundation (KTF). The KTF, as a stakeholder in this case, has a mission to 'keep the spirit of Kokoda alive' and 'repay the selfless help given to Australia during WWII' (The Kokoda Track Foundation 2013). With the help of donations from the Australian public the NGO was established in 2003. Their focus is on continuing the relationship between PNG and Australia and helping the people of the Track as a thank you to the

children of the selfless Fuzzy Wuzzy Angels[13] for their help in 1942 (Pers. Comm. P. Lindsay 20th February 2012).

Tourism operators also play an important role in regional management and the members of this stakeholder group agreed (Tour Operator 1, Tour Operator 2) conceptualising the Track as a historical tourist destination for Australians. In discussions with both local and international tour operators, their understanding of the Track is based around their customers, the Australian trekkers. Some call this trek a 'pilgrimage' (Bryant 2009) for Australians, those who come to walk in the steps of their forefathers (Tour Operator 2). One tour operator makes clear that the Track is about tourism; 'this is a destination that is wartime historical tourism, that is what it is about' (Tour Operator 1). Further to this, another tour operator believes the motivations of other stakeholder groups need to be aligned with what the Track really is, or really means. 'If we want to really experience what the young diggers went through and if that is what this Track is all about, which I think it should be and it is' (Tour Operator 2), this operator believes it should be maintained according to this original use of the Track.[14] While the perspectives of tour operators quite accurately reflect that the land of the Track represents a historic tourism product, they also assume the predominant motivations of trekkers is to visit a military tourism destination. A recent study, however, conducted on the motivations of Kokoda trekkers explains this is the main, but not the only, reason for tourists to walk the Kokoda Track (Grabowski 2007).

The communities of the Track, the children and grandchildren of the Fuzzy Wuzzy Angels, have their own understanding of what the Track means to them. The communities are never forgotten about in dialogue with participants in this study, and always 'represented' by others, however, understanding from the communities themselves provides invaluable insights into the people that live along the Track today and how they conceptualise their land. Most community members conceptualise the Track as their livelihood source. Many community participants articulated that the Track is their 'only hope' in reference to the limited economic development

[13] The Fuzzy Wuzzy Angels is a term that was given to the indigenous people of PNG who helped the Australian soldiers in WWII (Nelson 2007).

[14] The issue of upgrading and improving the access along the Track is discussed further in section 4.2.5 where the views of the communities and the views of the trekkers conflict.

opportunities available to them in rural PNG. Other representatives referred to the Track as 'our everlasting gold', an interesting sentiment that has an implicit reference to the proposed mine that got shut down along the Track in 2009. The community members in this study rely on the Track to supplement their subsistence lifestyles in terms of income earning opportunities. These particular comments reflect on the way in which the communities establish the Track as a form of social and economic security net for now and into the future.

Communities also articulated that they see themselves as fortunate to have 'the Track' and recognise the opportunities that are available to them that would otherwise not be accessible in rural villages around the country. One participant who originates from Popondetta, a village in the Northern Province, had married and moved to Naduri, a village along the Track. He states that it is because they are a community of the Track that they have the ability to develop and modernise:

> we can just change, because this village is along the Track. (Naduri Representative 2)

He and other community representatives believe they have the right to develop and to modernise because they are the people of the famous 'Kokoda Track'. 'We don't have any government helps to our village but as soon as we have that Track, trekkers coming, they bring us services to our village' an Alola Representative (1) explained. Understanding how this mindset has developed is complex, as the historical components of tourism development remain highly anecdotal. However, the way in which the communities understand the economic importance of where they live in relation to other rural communities demonstrates that influential relationships that have contributed to this understanding have been predominately Western and specifically Australian (this will be discussed further in 4.2.2). This supports statements presented earlier in this section suggesting the symbolic importance of the Track to Australians is far stronger than to PNG nationals.

Stakeholders bring with them their own set of values and worldviews that often differ from others. Understanding different values and conceptualisations of a region is something that Nursey-Bray (2006) suggests is key to the success of collaboration,

specifically in relation to establishing co-management arrangements. Bentrupperbaumer, Day and Reser (2006) argue specifically that understanding values is quintessential to the people side of natural resource management. If partners in co-management arrangements understand other stakeholder values, there may be more chance of these values being protected and incorporated into a management plan in the future. One stakeholder group that has been developing relationships with local communities for a long period of time is international tourism operators. The next section on regional management details the findings and analysis of the role of tour operators on the Track, both local and international, and posits that international stakeholders are central in the fabric of current collaboration for tourism along the Track.

4.2.2 Tourism Intermediaries and their role along the Track

Tourism operators, specifically international operators, have had a significant influence on the nature of tourism development along the Track. Unlike Fiji, which 'possesses a comprehensive legislative and policy framework targeted at situating tourism development within the institution of customary land tenure' (Scheyvens & Russell 2012, p. 2), tourism along the Track has evolved as a piecemeal industry influenced largely by international tour operators. Based on anecdotal information from this study, the first commercial treks were in the early 1990s and development of the current tourism industry was quite an organic process that continues to be influenced largely by Australian tour operators and their ability to build trust and relationships with local communities. This section will focus on the relationship between operators and communities and explore the role of tour operators as intermediaries in regional co-management. The information in this section is based on two extensive interviews with tour operators (one local and one international) along with perceptions of other participants. This primary data is supported with information from studies by Wearing and McDonald (2002) and Wearing, Wearing and McDonald (2002; 2010) who coined the term tourism intermediaries[15] as a way to understand the role and social interactions of tour operators along the Track.

[15] The notion of an intermediary is introduced by Wearing and McDonald (2002) as a term to describe the role of tour operators in tourism development. These authors apply Foucault's notions on power/knowledge and governmentality to 'argue that the relationship between intermediaries and rural

In the first decade of the 21st Century, Track tourism growth was substantial and statistical data has been recorded by the KTA supporting this proposition (Chief Advisor KTA). With the growth of the industry there has been an influx of both local and international tour operators[16]. A recent desktop study was undertaken that concluded the value of the trekking industry was approximately AUD$15 million in 2011 (Carlsen 2012). According to Carlsen, of this figure, approximately 36% remains in PNG and within that, only 12% remains in the villages along the Track[17]. A significant number of tourists that walk the Track choose to travel with Australian tour operators (Carlsen 2012). With the lion's share of the tourist market, the influence of these international tour operators must not be underestimated. A case in point is Carlsen's study, which was conducted using the top 10 Kokoda Track tour operators (ranked by the KTA based on tourist numbers) all of whom were Australian companies. This scenario of dominating and influential international tour operators is common in developing nations, where foreign investors control a large portion of the market and consequently the development of the tourism industry (Scheyvens & Russell 2012).

The prominent role and significant influence of the Australian companies on Track tourism creates a contested environment. The domination of Australian tour companies creates conflict between local operators and international operators for a slice of tourism revenue. While both local and international operators stated there is a level of tolerance between all companies operating along the Track, participants highlighted that tension between operators is rising. One local operator stated that speaking for many locally based companies, the Australian operators dominate the market, leaving few opportunities for the locals and their businesses. She also stated that due to limited resources, such as access to emails, websites and even phones or faxes, the local companies are disadvantaged compared to their Australian counterparts (Tour Operator 2). This local tour operator believes there is a real need for the government to stand in

---

isolated area communities must take relations of power and knowledge into account when planning and designing programmes for tourism' (Wearing & McDonald 2002, pp. 191-2). While Foucault's philosophy lay outside the scope of this research, the focus on understanding the intermediaries' role and influence in tourism has specifically been applied to this study.

[16] There are currently 88 licensed tour operators listed on the KTA website.

[17] The issue of economic leakage is a common theme within the tourism literature, where significantly large portions of tourism dollars are directed back overseas to the home country of international operators (see Mercer 2004 for strategies to decrease economic leakage).

and regulate the industry to ensure that local operators start to benefit more from an economic point of view for participating in the tourism industry.

However, from the perspective of an Australian operator, there are too many unqualified local operators running treks along the Track and the market is saturated (Tour Operator 1). The Australian tour operator states that ‘you got to be professional to take them across’ (Tour Operator 1); there are many companies with a lack of experience in first aid and emergency evacuation procedures. He believes there needs to be tighter regulations on permits for tour companies to operate. These feelings of mistrust and tensions between local and Australian tour companies may potentially contribute to the contested business environment on the Track.

In this case, it is the influence of the international tour operators, which is of importance to understanding tourism development and the mechanics behind the industry. International tour operators generate a larger portion of the income opportunities for local communities along the Track. Specifically, the employment of locals as porters or carriers for trekking groups is seen as one of the biggest contributors to economic development (Carlsen 2012). Based on Carlsen’s (2012) study of the value of trekking, AUD$1 320 396 was generated from Australian based tour operators and AUD$541 362 was generated from trekkers themselves for portering services[18] along the Track. While the economic stimulation for the communities is promising, the high leakage of tourism profits to offshore companies is a concern for tourism policy more generally.

Both local and international tour operators touched on the issues of a lack of tourism policy guiding the industry. On both sides there is a concern that the industry needs tighter regulation and control in order to continue to operate. An Independent Consumer and Competition Commission (2006) review of tourism in PNG concluded that the tourism policy environment in PNG has had little attention from the government and consequently little in terms of policy formulation and the coordination of government agencies has resulted (Basu 2000). However, increasing academic interest in tourism in the country (Bhanugopan 2001; Guaigu, Prideaux & Pryce 2012; Imbal 2010) and a new initiative to develop a Ministerial Committee on Tourism (Independent Consumer

[18] Portering services are offered by tour operators (both local and international). This service includes a personal porter to carry luggage and tourists can generally chose to pay for these services if they desire.

and Competition Commission 2006) suggests that the Government is now focused on a coordinated effort to develop tourism policy in PNG. However, in lieu of the lack of policy on tourism development, customary landownership as a community-based legal system of land management continues to provide the only legislative framework underpinning tourism on the Track.

The capacity of tour operators to conduct their business within customary landownership legislation relies on their negotiation abilities with communities. Information collected from primary data interviews and observation of tourism infrastructure on the Track suggests this has been relatively successful. In addition to increasing employment opportunities through portering, international tour operators have been helping locals establish small community-based businesses to support tourism. In a country where opportunities are limited due to rural isolation from basic services, by comparison, the communities of the Track are extremely lucky (Naduri Representative 1). Tour operators have been working with entrepreneurs in the villages to establish small businesses, namely guesthouses and campsites to support the tourism industry; many community members who participated in this study own and operate guesthouses or campsites. The guesthouses are raised huts, made from local bush materials. The campsites are often large flat areas that have been cleared from trees and bushes to make space for tents, often close to creeks for washing. Community guesthouse owners charge a per-head fee to all tourists and a significant amount of money can be made from this type of business, particularly in the busy months. This economic livelihood opportunity introduced by operators has been welcomed by communities and resulted in a reciprocal relationship between these two stakeholders.

However, with the increased revenue from tourism, there is an argument to suggest that tour operators or intermediaries have established a dependency within the communities. Local communities see the tourism industry, and in some case the trekkers themselves, as the easiest way to make a living and their subsistence based livelihood activities are put aside during the trekking season.

> Everyone is busy cleaning up the guest house, cleaning up and some people are getting ready to start trekking on the Track and getting themselves not to go gardening or you know just make themselves safe for the trek to start and they go trekking because we earn money from the trekking. (Efogi Representative 2)

With the cessation of subsistence farming activities during the trekking season the local communities have become reliant on the tour operators to continually bring tourists each year. The influence of tourism on subsistence lifestyles has been seen in the Okavanga Delta where traditional livelihood activities have been forgone in favour of participating in community based tourism (Mbaiwa & Stronza 2010). Mbaiwa and Stronza (2010, p. 644) indicate that the positive benefits from this change have resulted in improvements to basic needs, and social services and employment was found to be one of the main benefits'.

With a large portion of income being generated from international tourists, there is danger of overreliance on the Australian inbound tourist market. Many national and global events effect tourist numbers worldwide and these often lie beyond the control of the host communities (Lew, Hall & Williams 2004). As a consequence reliance on international tourism places local communities' in a vulnerable position , as opposed to traditional subsistence agriculture where the risks are not as great (Mbaiwa & Stronza 2010). Therefore on the Kokoda Track community reliance on international tourists brought in by Australian operators creates levels of uncertainly and there is a lack of buffer against serious peaks and troughs that characterise the trekking industry. This has occurred in this case with a major downturn of tourist numbers on the Track as a result of a fatal plane crash (Australian Associated Press 2009) and a number of medical related deaths in 2009. This is one of the topics that was raised by the Chief Advisor of the KTA. He expresses his desire to be able to share the Track experience with other trekking nations as this will also help to alleviate the reliance on the Australian market.

The role of international tour operators is highly influential in the eyes of community members and consequently, establishing new community based tourism ventures has been discussed. However, the advice from tour operators in relation to guesthouse establishment has not always been successful. On two occasions during interviews, stories were relayed about new campsites being built by community members to service the trekkers. However, in both cases, neither campsite had generated any income or had had any tourists come and stay at their campsites. One campsite was established on a steep hill, where one tour operator stated clearly that 'people will not stay in that

location' (Tour Operator 1). In the other case, the campsite was established in an old battlefield location that is a few hours walk from the main Track, and very few tourists make the day trip out to see the sight, let alone stay the night in the region. These incidents reflect negatively on the tour operators. However, it is unknown from the data collection, whether in these circumstances, the relationship between the tour operator and landowners has suffered.

The tour operators who participated in this research stated they value the relationships they have developed with communities and that they have a wealth of knowledge to share about the process of working with Track communities. One tour operator talked about himself and his colleagues (other Australian tour operators that have been operating for over 15 or 20 years) as knowledge sources that need to be tapped into in relation to future management and development of the region. He states that they are the ones at the 'face level', interacting with communities and seeing the impact in the villages from tourism operations (Tour Operator 1); they hear what is happening on the ground and can respond to communities' needs. He also believed that if future plans for sustainable development were to be put into place, that the well-respected tour operators would be able to play a key role in negotiations with communities, based on their well-developed relationships.

While tourism intermediaries foster employment and income generating opportunities in communities where government services are limited, their powerful role in controlling tourism development warrants questioning as does the lack of legislative policy to manage tourism. While 'communities with secure land tenure are in the strongest position to manage tourism on their lands and gain the lion's share of benefits' (PPT Partnerships 2004, p. 4), the lack of a conducive legislated framework to manage tourism means international tour operators are largely influencing tourism development based on individual negotiations with landowners. Through community based ventures, local communities play a supporting role, similar to other cases in the Pacific presented by Scheyvens and Russell (2012), where the most significant amount of tourism revenue is generated by operators and directed offshore. Despite these negative consequences of tourism development on the Track, fostering the relationship between tour operators and landowners has had positive outcomes for local community

livelihoods. Some international tour operators direct their attention to the process of establishing and nurturing relationships with community members and groups, and sharing knowledge on tourism operations for the benefit of the local communities. Other stakeholders who focus specifically on increasing community livelihoods are the philanthropic non-government organisations and government agencies in this region. These stakeholders also play an important role in regional co-management, which will be explored in the next section.

4.2.3 Sustainable Development and Philanthropy Improving Community Livelihoods

Communities around the globe have turned to tourism as an effective way to utilise lands for the purpose of sustainable development and increasing livelihood opportunities (Scheyvens & Russell 2012). In some cases, tourism development has been introduced in the creation of protected areas and incorporated in WHA management plans as a method of engaging local communities and increasing benefit sharing with those who are most effected by WHA designation (Magi & Nzama 2009). However, while protected area gazettal of the Track is in its early planning stages, findings from this study demonstrate that a tourism industry already exists and that communities of the Track are already receiving benefits from sustainable development and livelihood projects. This section will present the findings and discuss the development and livelihood projects being run by different stakeholders along the Track. This discussion highlights how additional stakeholders participating in regional management of the Track contribute to further complexities in managing relationships and resources.

Reciprocity plays a large part in the business of the Track. With no formal legal partnerships between tour operators and landowners of the Track, reciprocity for cooperation, in terms of philanthropy, has become widespread. A number of community members specifically identified one or more Australian based tour operators who they have a relationship with and who they trust and rely on for tourism business. Some community members discussed how certain Australian tour companies and their trekker clients deliver medical and educational supplies to their villages. There were also findings to suggest that government and non-government agencies have been introducing livelihood projects for Track communities to ensure benefits of tourism can

be maximised in the villages. The community livelihood projects and services are important to understanding the context of tourism business on the Track and help to gain insights into relationships that develop between communities and other stakeholders.

The first organisations to offer livelihood projects to Track communities were probably the long standing tour operators. One of the tour operators, who has been in business for over 20 years, stated that philanthropy on the Track began in his organisation with a few trekkers who returned from the Track and were passionate about helping the sons and daughters of those who helped the Australians during WWII (Tour Operator 1). According to several community representatives, there are a number of international tour operators that have been providing services to Track communities, such as school and medical supplies. However, there were a few community representatives that spoke about bigger projects for community development such as health clinics or classrooms; ‘one trekking company has promised to come and build a permanent classroom for me’ said a Naduri Representative.

While some tour operators appear to be working with a select few villages on longer term development projects, other villages are not receiving the same support.

> There’s not many trekking companies supporting schools and health. There are a few that donate stuff, materials or the kit, first aid kits to villages…but we want to see them support education and health (*in the long term*). (Naduri Representative 1)

Certain community members in neighbouring villages recognise this disparity in the level of support they receive between operators. There are, however, other organisations working on sustainable development projects in the region.

The KTF, who focus on education, health, microbusiness and community development, has been operating since 2003. This NGO is currently working in 40 communities and had a yearly expenditure of over $570 000 AUD in 2012 directly injected into communities through their four project areas (Kokoda Track Foundation Limited 2012). Since its inception, the KTF have supported over 1400 student scholarships (350 scholarships in 2012), trained 60 elementary and primary school teachers and conducted

a school resource program that supports 40 schools across the Track and surrounding region (Kokoda Track Foundation 2012). In the area of health, in 2012 the KTF funded the postings and salaries of eight community health workers to operate aid posts along the Track, ran immunisation, maternal and infant health outreach patrols to all 40 villages in the region and began the construction of their Kokoda College to develop a Community Health Worker learning program to begin in 2014 (Kokoda Track Foundation 2012). The KTF is also widely known in the communities for their work with microbusiness, particularly for women's groups.

One project that communities commented on involvement with is the establishment of microbusinesses, with the help of the KTF, to support the tourism industry. These include food stalls to sell fresh and baked produce to trekkers.

> Community health projects, in terms of training… also help with supplying medicine and health equipment such as beds and medicine etc to the aid posts plus the Hospital at Kokoda station… the organisation does community micro business, the women's micro business and I know we have a project officer also on the ground that does the catchment areas. He pretty much works with the executive director when she is up there so, training women in cooking different menus and that sort of thing and so far from my experience being up there for six weeks in the village in Kokoda village I saw the results of what they have been teaching the women such as women baking donuts and scones and bread and selling it to the villagers and they are very happy with their micro business at the moment so that is a success… we also have the education projects. (KTF Project Officer)

Many community representatives and indeed other stakeholders commended the work of the KTF.

> KTF has been really going in, I think, a more successful and bigger way (*than the KTA and KDP*). They've got their hands into education particularly and health and microbusiness…it's been wonderful, they've really done something more constructive and it's more visible for the people to see that it's happening. (Tour Operator 2)

Experiencing the work of the KTF first hand, while completing the fieldwork component of this study, it was clear that this organisation has had a lasting impression on the communities of the Track. Several communities had arranged a traditional welcome for the arrival of the NGO's executive director and her team. Community members often gathered on the outskirts of the village awaiting the KTF's arrival. Speaking to some community representatives, they were immensely grateful for the

work of "Dr Gen" (the Executive Director of the KTF) and her employees that are on the ground throughout the year. The services and projects provided by the KTF have contributed significantly to the lives of the communities.

The approach of the KTF to working with the communities was something that became clear through discussions with community representatives. The local level stakeholders commented on how they appreciate that the KTF come into their villages and help with education and health initiatives and most community representatives in the study claimed to know the executive director and her team well. One representative also spoke about the way in which the KTF approach working with communities:

> like KTF, they wanted to work with they go through the landowners and the two brothers then they came through us ok 'cos we go to the communities. (Efogi Representative 2)

The Efogi representative acknowledged that the KTF have worked through appropriate community-based social structures in order to gain approval for their projects to be run in his village. It seems an important aspect of the relationship between the KTF and communities and has likely contributed to the respect and trust between these two stakeholders.

Microbusiness projects along the Track are also something that is being pursued by the Kokoda Development Program (KDP). The KDP is one of the delivery partners of the Kokoda Initiative (KI) and is running a number of projects across different villages. While it was sometimes difficult to ascertain which organisation (the KTF, the KDP or the KTA) was running projects in particular villages, communities were generally happy with the support to establish their own tourism businesses. For example, a representative from Manari spoke about how the women in her village were involved in the microbusiness project with the KTF and she was very pleased for the support. It appears that women may have less opportunity to make money from trekkers, as the main income from tourists into the villages is the through portering services (Carlsen 2012), which is predominately done by males in the community.

With the project work of the KTF, the KDP and individual tour operators, development on the Track and in the region more generally has grown rapidly. On the other hand, with so many organisations involved in development, duplication has resulted as aid work between different groups is mostly uncoordinated. One tour operator raised the issue of duplication and said he finds there to be an overlap in delivering supplies to schools and clinics (Tour Operator 1). The lack of coordinated aid[19] effort was also raised by the Chief Advisor to the KTA:

> I think the best line I've learned up here is 'beware the well intentioned'.... because these people, each group are so committed, so passionate, they're great people, like really good people, but they've got blinkers that come out 3 foot on both sides of their hands ... and you can just see that their particular task is so important and it's so important they don't actually need to talk to other people. (Chief Advisor KTA)

Evidence for the need for a coordinated aid effort was given by the Chief Advisor; the issue of installing piping for communities:

> There is no coordinated effort in doing this, so when there is a hole in one pipe, communities have to make their way to Moresby, or ask the provider for more supplies, as opposed to be able to grab some spare pipe from a neighbouring village, as all the piping systems are different sizes. It’s a simple thing that would help out the communities greatly. (Chief Advisor KTA)

The number of livelihood projects on the Track has resulted in change within the villages according to some community members. Participants reflected on development during conversations, specifically referring to physical changes to their villages. A participant from Manari commented that ‘the mountains and the place will not change but the people changing and the development is coming through the village, so each bit by bit, changing’ (Manari Representative 1). Other participants reflected on their old methods of building and having to continually replace and repair the roofs on their homes made of bamboo (Efogi Representative 2). Some communities talked about new buildings being erected, such as a new clinic in Manari (Manari Representative 1), or a new classroom in Efogi (Efogi Representative 3) being built. These new structures are

[19] This idea of coordinated aid efforts was raised at the Kokoda Initiative Stakeholder Forum in 2011. Back then, stakeholders present agreed there needed to be more effort towards preventing overlaps in the delivery of aid and the suggestion was made to host an aid alliance website where each organisation can post their projects to ensure against repetition. Until this time, no such coordinated aid effort has been pursued.

made with modern building materials, which mean they will not need the annual maintenance of a bush hut.

Communities appear to look at change in a positive light in terms of physical changes and infrastructure improvements of their village. They desire more change, increasing the number of houses with iron roofing (Efogi Representative 2, Isurava Representative 1), building more school blocks (Efogi Representative 2) and proper health centres (Isurava Representative 1, Alola Representative 2) in their respective villages. Some community members requested the need for change in their lifestyles, including sentiments such as 'my dream is I want this, the village of Naduri…to be like a city like when you see the Australian main city' (Naduri Representative 2). Communities also see increasing numbers of children attending school, through programs run namely by the KTF and KDP, 'Its good to bring in development…classroom, clinic and airstrip…more students, teachers are coming' (Manari Representative 1). However communities desire more development; 'we live in the in this big jungle is good but we need some help so that we can meet our needs also' (Isurava Representative 1).

In summary, this section has discussed sustainable development and philanthropic projects that have gained momentum since the increased profile of the Track as a result of growth in the tourism industry. This research explores how through tourism on customary land, communities are receiving new livelihood opportunities through sustainable development projects and philanthropy. Despite the dominant discourse of development in the Pacific continuing to centre on the issue of landownership (Scheyvens & Russell 2012) and whether land reform and the privatisation of lands specifically in PNG will result in improved livelihoods for local communities (Gosarevski, Hughes & Windybank 2004), this case suggests that land privatisation is not the only path toward development.

It is also through Track development projects that the communities have come to realise the value of their land and the importance of their land as a tourism product. While other land use options exist, such as mining and other extractive industry options, communities are currently choosing tourism (Chief Advisor KTA). Compounding this, communities have realised that by choosing tourism, the benefits they receive in the

form of improved livelihoods have reduced their sole dependency on agricultural subsistence farming. However, these transformations from traditional subsistence lifestyles have contributed to social and cultural changes that have an influence on the way communities manage tourism at an intercommunity level and between other tourism stakeholders. This issue will be discussed in the next section.

4.2.4 The Social Effects of Community-Based Tourism

Community-based tourism (as discussed in section 4.2.2) and sustainable development and philanthropic projects (as discussed in section 4.2.3) have resulted in societal and cultural changes along the Track. The change from a traditional subsistence based livelihood to one of a cash economy with income generated by tourism has resulted in a dependency by communities. While there have been many positive consequences from community-based tourism and sustainable development projects, findings also suggest some negative social issues have arisen in the communities. Firstly, the dependency of communities on tourism will be discussed, followed by the introduction of the cash economy and the way that has influenced traditional livelihoods. Finally, findings on the issue of intercommunity rivalry and conflict will be presented and discussed. These societal changes raise questions as to how these changing traditional lifestyles and customs of Track communities impact customary landownership as a central component of local level management.

Community dependency on tourism was a theme that came through from the interviews. The following two quotes articulate the views of some community representatives and draw attention to the value the locals place on the Track.

> At the moment, we are like that, like most of the villages at the moment are saying that we are lucky to have the Track because nearly all the services, projects that are run along the Track are run by KTA…ohh KDP the projects and like organizations like KTF and ah yeah KDP they are the ones who are supporting the locals along the track so we were saying that we are lucky for the last 5 to 10 actually 10 to 15 years we have not received anything from the national government in terms of health services health and education. Its only KDP at the moment KTA to KDP are the only ones who are supporting health and education…so we are only benefitting from them now. (Naduri Representative 1)

> Track is very very important to us, we can bring maybe logging company or we cant even the mining company coming in here and said we found the gold out here we can they get each ahh, possible up to maybe 15-20 years then it just comes here for 20 years and then goes back again we'd be hopeless out here for next how many years…but the track is very very important to, to the people along the track. Not only to Efogi but I hope its all along the track. People said that track is our…important, our everlasting gold. (Efogi Representative 1)

These community members spoke about their understanding of the economic importance of the Track and the continuation of tourism. While mining has been presented as an option for some landowners of the Track, a number of community representatives in this study suggested that tourism was the better option for the people of the Track (Efogi Representative 1).

> The Track we want to make sure that we don't ever mine like mining. We don't want to see a mining along the Track. If they're mining yeah, mining or drilling that should be done outside of the Track not through the Track so the Track will remain as it is. So that ah, and also we have areas along the Track that are special and like ah locals refer to that as a memory or to them because their the Fuzzy Wuzzy Angels, their grandpas and maybe grandmas fought along the Track and they want to see that as a memorial to them so we don't have to destroy that (Naduri Representative 1)

Economic development was a consistent theme and the role of the cash economy has had an effect on communities according to one participant. One participant, who is a local community man, identified that a compensation culture has been created and hence, a cultural shift is moving through the communities. This participant shared his experiences as a child growing up in one of the villages along the Track and his concerns about the changing nature of his community.

Peter's thoughts on the changing nature of his community

I met Peter in 2010 while I was conducting another research project. Peter was on the Board of the Kokoda Track Authority at that time and he was eager to be involved in my research. While that was only a small project, when I got back in touch with Peter for the purpose of this research, he was only too eager to speak with me again. Peter has since been promoted to a senior position in management at the KTA and he spends his days trying to improve the lives of the people of the Track, a place he calls home. Peter grew up in a small village along the Kokoda Track and he and his siblings lived with his grandparents, who were subsistence farmers. He returns to the Track about three times a year, with the management team, to foster trust and good relationships that he has built with the communities.

Peter reminisced about his childhood in a discussion with me, telling me he was a naughty child and how much he hated washing in the cold water each afternoon. He spoke about how everyone in the village would work and play together, across generations and between family clan groups and how everyone would always welcome visitors. However, Peter recognises some of the significant social changes in his communities since the introduction of tourism.

> *Yeah changed from being, you know, like normally in terms of the way of people relate to visitors that come along the track they normally welcome them as a Christian obligation, and then provide them services for free but now you, for people to actually provide you services you'll have to pay for them and that, that culture has been introduced by the trekking industry and so the old culture of people naturally responding to the presence of visitors and just not asking them if they need anything but just providing out of their obligation to humanity exchange. Now it has become commercialize.*

Peter suggested that 'while it bring income earning opportunity to the people, it creates this feeling of individualism, meaning if it's your business it's entirely up to you to solve your problems, come up with ways you can actually address your issues'. Peter has really noticed this in the establishment of guesthouse businesses along the track.

> *You see the guesthouses that are built that's a new concept that has been introduced by tour operators cause there's competition among them to stay in particular area they've encouraged locals to actually build guesthouses where they can actually use for the their business and that competition has actually rubbed onto village people so the spirit of competition now exists within villages and so now there's so many guesthouses and they competing against each other to actually get clients and the number of clients are not enough to actually fill all the guesthouses so that's the feeling of striving and competition among the people.*

Peter attributes these changes to tourism and specifically the introduction of a cash economy by tour operators, creating a compensation culture amongst the people. He said that 'when the first tour operators introduced service for payment, like encouraged the people to get money for the services that they're providing and so, that that actually created a that mindset that you provide a service, they'll pay you'. Peter pointed out to me that anyone could be able to see this is the case, especially when you visit with communities just off the Kokoda Track. He spoke about his annual pre-season trek in 2012 and visiting a number of villages off the main track, and spoke about the collectivistic culture he remembers still existing in those villages today. Peter believes the spirit of the Fuzzy Wuzzy Angels lives on in the people of the Track.

The social and cultural changes *Peter* refers to resemble those addressed by Mbaiwa and Stronza (2010) in their study of the changes to traditional livelihoods as a result of tourism development in Botswana. Mbaiwa and Stronza researched the shift by communities from subsistence agricultural practices to involvement in tourism development and transformation of the traditional societies. They found that since the introduction of the cash economy from tourism development, communities have left behind their subsistence agricultural livelihood activities. As a result, western models of development have shifted the focus towards a money market driven society (Mbaiwa 2011). Subsistence livelihoods are still practiced in Track communities, however, the nature of these practices are changing due to the introduction of the tourism driven cash economy.

Another physical and social change that can be seen in villages is the abandonment of thatched huts for modern housing materials; this can also be paralleled with the case study of the Okavanga Delta. A number of community representatives spoke about the new infrastructure on the Track in terms of schools, clinics and churches. Communities articulated that the change to modern roofing iron as opposed to thatched bush material roofs is welcomed and they wish that all the houses in the villages could have modern roofs. Their attitude towards traditional repairs of bamboo and other natural fibres to make roofing is tiresome work that makes life difficult.

> We would like, the local people they usually like the houses to be built with iron roofing getting the solar lights or the like we get power. That's what we usually, in this time we really need like lighting in the house and, and then we leave these bush materials and then we live on the roofing iron. That's what we really need. I have decided that it is not good our life, must be, we must be many changes in our lives. So we are doing all this bush methods or whatever we still do, we must leave all this, we must leave everything and to be modern. (Isurava Representative 1)

The physical changes that the Isurava Representative speaks of resonate with many other communities' aspirations.

> We really want to live in you know next with the modern you know lifestyle. We are tired of living in the bush huts or some like here like those bush leave we use them to, bamboo leaves you know. (Efogi Representative 2)

The community exposure to modern lifestyles through tourism (Naduri Representative 1) has resulted in a social shift towards development and modernisation However, with this introduction of modern building materials and new infrastructure, issues of jealousy have arisen.

The concern of intercommunity jealousy as a result of tourism development was raised during fieldwork. The KTA CEO, among others, stated that due to the inequality of tourism revenue between on and off Track communities, jealousy and competition is now widespread. One community participant raised his concerns about the equality of benefit sharing of tourism revenue generated along the Track.

> Oh yeah, that's what are most people are giving about like normally they see trekkers walking up and down they saw oh, these people are walking up and down and we are not even benefitting from ahh these trekkers. So like they arguing that our money has been paid has been paid to KTA and half of our money is being used by the government like normally they they've budget they have budget for, for the Track, like Australian Government, I think they budget as well for trekking like there's some money that is sent to the national government and like they use up the money and like with the Kokoda name…there are a lot of people outside of the Track who are also benefitting and like...sometimes some parents argue that ohh their children are not benefitting from all these and the people from outside are who are benefitting. (Naduri Representative 1)

Other participants raised this issue of jealousy as well. One particular village on the Track that is enjoying significant benefits for choosing tourism over mining is the village of Naoro. Demonstrating that there are other alternatives to mining, the Ministry for Agriculture and Livestock has helped this village through assistance with agricultural projects and microbusiness support, according to a number of community representatives from other villages (Naduri Representative 1). However, this increased attention from the government has led to village rivalry, where other communities see increased interest and assistance in Naoro, as something they have not received. Increasing disparities, similar to those raised here between communities and villages, have been discussed at length within the literature on community participation in tourism. Goodwin and Roe (2001) state that tourism can often result in community disruption and conflict, especially between neighbouring villages.

Community rivalry was a topic of discussion at the KI Stakeholder Forum in 2012 in relation to changing values, specifically related to community envy that is perceived to

be developing between the people of the Track and surrounding areas. Compounding the issue of competing community members among Track villages, issues were raised that communities off the Track were jealous of the development and the benefits Track communities received. One stakeholder at the forum stated that off Track communities were sending their children to schools along the Track, as education levels were vastly improved from their own villages (Minutes from the KI forum 27 March 2012).

However, despite the negative social changes that have been identified by participants as a result of tourism development, the KTA CEO states that the 'community feel' is not entirely lost. While the tourism season does dominate the lives of the communities, the role of religion and the church still exists, keeping communities together. When fieldwork took place in February (2012), communities were preparing for the trekking season to begin. Most people were involved in some way, either repairing guesthouse rooves, ensuring their gardens were maintained and those who were portering, had made arrangements to begin their season of employment. As a community member stated:

> when they (*tourists*) are trekking, we are busy. (Efogi Representative 2)

Subsistence farming, trips to the city for supplies and visits to see family and friends all take place outside the trekking season, to ensure community members are back in the villages before the first tourists arrive in early April. Despite the influence of tourism, the religious values and commitments of the communities appear to still play an important role in the fabric of society. Most communities along the Koiari side of the Track are Seventh Day Adventists and respect for the Sabbath means no one works in the villages on Saturdays whether there are trekking groups in the village or not.

The KTA CEO specifically raised the issue of the role of the church within the lives of the communities. This participant and other stakeholders specifically spoke about the role of the church in the lives of the people of the Track and the influential role that the church plays in maintaining peace in the communities. Although in terms of business, he believes communities' first look after themselves.

> It's (*the sense of community*) not completely lost because of the presence of the church …people still work together in groups 'cause of the presence of the church in the communities along the Track. In terms of business in a secular way, it's like everyman for himself. (KTA CEO)

> As usual, with every economic development you do get social problems and social issues and that is there. But ah, it's not as bad as it could have been, we have churches that are all under, controlling the young people, so it's good. (Tour Operator 2)

This Tour Operator, who also grew up along the Track, emphasised that community values have and continue to shift. She reiterated the role of the church, in a similar way as the KTA CEO did, as a mediator for social change in the community, particularly around community-based tourism business. This is similar to other studies in PNG, where the church, in particular women in the church, play an important role in mobilising and managing change within the village setting (Dickson-Waiko 2003).

It appears that community-based tourism business plays a significant role in the lives of the communities along the Track. The burgeoning tourism industry, in conjunction with projects offered by aid organisations has provided substantial income earning opportunities for the communities of the Track. However, issues of changing community values among homogenous and heterogeneous groups on and off the Track indicated by participants are a consequence of the social and economic development that influences traditional lifestyles of Track communities. These changes may bear influence on broader discussions of collaboration and the nature of working with dynamic local level stakeholders. The next section will present the findings on the role of the KTA in regional management. Presenting findings and generating discussion on the role of the local management authority, the next section highlights what happens when Western ideals of management meet local traditional methods of land management.

4.2.5 The Management Authority and their Perception in the Community

The building of institutions to manage natural resources is an accepted component of co-management theory (Armitage, Plummer, Berkes, Arthur, Charles, Davidson-Hunt, Diduck, Doubleday, Johnson & Marschke 2008; Berkes 2008; Folke et al. 2005). These institutions, often referred to as bridging organisations in co-management literature

(Berkes 2008), are enshrined, whether by legislation or not, to the task of juggling the needs of multiple stakeholders in social-ecological arenas. In this case, the Kokoda Track Authority (KTA) is positioned as the bridging organisation. The KTA is a mediating body between the tour operators and local communities for the purpose of managing tourism development of the Track. More details of the role and responsibilities of the KTA will be presented in this section along with the perception of this bridging organisation by other stakeholders, particularly the local communities which they represent at the regional management level.

The KTA is a government established special purpose authority that is commissioned to:

- Work with tourism providers to develop and maintain the tourism industry in the Kokoda Track corridor
- Assist track communities to secure a sustainable future
- Collect and manage trekking fees and permits
- Oversee and regulate the licensing and conduct of tour operators to ensure the sustainable management of the Kokoda Track and respect for local culture
- Consult with landowners and Local-level Governments on their needs relating to the distribution of tourism benefits
- Work closely with the Kokoda Development Program to deliver community development programs. (Kokoda Track Authority 2012a)

While the original KTA was established in 2003, the organisation underwent reform in 2008 with the financial and technical support of the Australian Government. Currently, KTA management is based on a Western model of management including a Management Committee (Board of Directors) and an operating team headed up by a CEO. The Management Committee is made up of representatives from PNG Government Departments, PNG Provincial and Local Level Governments and landowners and also tour operators (although currently the tour operator position is vacant). The KTA also has permanent staff (financially supported by the Australian Government through the Kokoda Initiative) in their operating team.

The reform of the KTA saw the introduction of Australian government employees contracted to change the negative perception of the old KTA, build capacity in the organisation and focus on ‘building confidence in the Track’ (Chief Advisor KTA). The

Chief Advisor, who was originally appointed to the role of CEO and now has localised that position to a PNG National, explained that the entire organisation was going through the process of localisation during the fieldwork component of this study (February-March 2012). At this time, the Australian Government employees were focused on capacity building of the new management team. During the interview with the Chief Advisor, he explained some of the achievements he has witnessed during the reform of the organisation. He stated firstly that:

> no one from the previous board or management have ever walked the Track. We, at least three times a year, walk the Track.

Further to this, he believes that a key priority was building trust back between the organisation and the communities; 'we've gone from a situation where there was zero trust, zero respect between tour operators, the landowners, communities and the KTA, to a situation now where we all know who we are and we can work together' (Chief Advisor KTA).

In addition, the Chief Advisor talked at length about changing institutional structures to ensure the return of tourism benefits went to communities in an equitable way.

> I think the whole engagement with the community is getting them on board, providing alternative ways of getting their issues heard, like again when we came here there was no wards, and no ward development committees, there was no ward structure there at all. There was no way that government could get resourcing to these people, so we had to establish a setup, the ward development committee setup bank accounts, do all the basic things, and we provide training for the councils, provide training for the transparency in financial management governments, these type of trainings for the people of those communities. (Chief Advisor KTA)

Since the reform and the establishment of the ward development committees, the KTA distribute benefits to communities through several schemes. A percentage of funds generated from trekking permits are filtered back through to the communities.

Firstly, communities establish village ward development committees and the KTA deliver benefits to the communities through the development plans that these committees generate. This is most often in the form of building materials and supplies for the construction and repair of community buildings. To help create development

plans, the KTA has adopted a traditional approach to collaborating with communities on pre and post trekking season treks. At these times, the KTA sit with communities in a traditional community negotiation style and listen to the concerns of the people. The KTA's ability to take the local level management approach to consultation has helped generate community support for the organisation and the process of working through ward development committees.

Secondly, the financial benefits that accrue from tourism are distributed to communities through direct payments to landowners for maintenance work. This is where the KTA has identified and acknowledges all Track landowners as key stakeholders and consequently pays them directly for permission to use their land for tourism and as a maintenance incentive to keep their portion of the Track in working order.

> There's a big difference between community and landowners. So the landowners honestly believed that they aren't getting any benefit from community payments because they go to putting a new roof on the church or buying a generator or doing these other things or the council just tries to steal money...so you know who of the landowners own this section of Track so we'll do an agreement with them… look after this section of the track, keep it to size, we don't want it to be wide. If there's a rock slip, tidy it up and just look after that section of the Track and it's done through 3 payments, that's 700, 700, 600, payments that we've upped then to 3000 this year because we see it as a fantastic way of putting money straight into land. (Chief Advisor KTA)

This financial arrangement between the KTA and the landowners themselves helps develop trust and recognises the important role that landowners themselves play in the ongoing tourism industry.

Finally, the KTA also delivers benefits to the community through income earning opportunities as an employer. The KTA representatives articulate that as often as possible, they try to engage with locals to do maintenance work and create income earning opportunities for Track communities. Some community representatives mirrored this sentiment and they stated that they themselves have been involved in maintenance work that was led by the rangers in their community. The KTA also employ local people full time through their ranger program.

The rangers are positions that have been introduced by the reformed KTA and are made up of KTA staff stationed in villages along the Track. The Chief Advisor spoke extensively about the need to raise the profile of the KTA through the positioning of rangers. There are five rangers based in villages along the Track. With the rangers themselves often originating from the village they are posted in or one nearby, the proximity of these KTA employees places them in a strategic position for the organisation. One community representative articulated that the ranger in his village had an important role to play in Track management:

> ranger got the radio the base radio… the ranger is in this village so when any problem I walk up to him and we'll solve the problem… he done good jobs. Yeah, he's good. Good leadership. (Manari Representative 1)

The KTA see the rangers as their eyes and ears along the Track and they leverage as much as possible off these employees and their ability to build trust and respect within their corresponding communities. The rangers do a significant amount of communication of KTA projects throughout the year, and building rapport with communities is a core component of their job. These rangers often originate from the village they are posted in, and have a close understanding of the local social structures that govern natural resources and tourism in their respective villages. They also understand the power asymmetries within the villages.

This program is similar to the concept of local rangers that has been introduced in the co-management of the Great Barrier Reef, Australia. Zurba (2010) states that the Indigenous Ranger Program was an initiative that worked towards incorporating customary law and the wishes of Traditional Owners into the local management authority. The program was well received by participants in her study. A Traditional Owner stated:

> It (the Indigenous ranger program) is a step in the right direction. I think that's the only way that we can go here because it gives the rangers new access into these countries and they will go according to what the Traditional Owners here will say. – Traditional Owner participant (011). (Zurba 2010, p. 128)

Parallels between the case of the Great Barrier Reef and the Track demonstrate the concept of local rangers, as an intermediary with local knowledge and relationships with

customary owners, has a positive influence on bridging between different levels of management.

There were, however, a few negative comments by community representatives in relation to the KTA employing staff, such as rangers. The Safety Manager at the KTA[20] articulated that the rangers employing locals often select people from their wantok[21]. This results in the rangers being familiar with the specific culture and clan groups of the employees and there is an understanding between wantoks about expectations and trust (Safety Manager KTA).

Some community representatives felt that sometimes the KTA favour their community groups. In addition, the KTA themselves acknowledge that funding for workers is limited and there is a finite amount of employment available. This type of intercommunity conflict is similar to the case of the indigenous Meqmegi community in Taiwan where job assignment and payment allocation is under the control of the Meqmegi Ecological Management Association (Lin & Chang 2011). There are similarities between the Meqmegi community and Track communities where preference is given to those who are from the same cultural background or community. Jealousy between non-homogenous communities is an important characteristic to acknowledge in order for the KTA to make informed decisions regarding the creation of employment opportunities and spreading the benefits of tourism.

A further example of the intercommunity jealousy that was raised in the interviews with communities was representation of landowners and employment of locals as KTA staff or board members. One community representative expressed his concerns on the lack of representation from the whole of the Track in the management authority. Namely, this community member believes there is a lack of representation from some certain cultural groups:

---

[20] As of March 2013, the position of Safety Manager no longer existed in the KTA (Pers Comm. Genevieve Nelson 5 March 2013).

[21] Wantok or wantokism 'refers to the mutual duties and responsibilities which exist between those individuals who share the same language' (Lea 1993, p. 91). This Melanesian pidgin English term is used throughout PNG and it is important to note that 'responsibility for those within the wantok system can be extremely demanding' (Lea 1993, p. 91).

> there are certain people in the KTA, there's the chairman and some of the officers, they all from the Mt Koiari areas, like Naduri, Kagi. The voices are from there, they are not representing the (whole Track). (Sogeri representative)

This notion of under representation in decision making from different communities could be due to the non-homogenous nature of the customary clans living along the Track. Another possibility is that the community member who made the comment was not from the Mt Koiari area and there is some underlying jealousy between the different cultural groups. Nonetheless, a concern of under representation of different groups is something that needs to be addressed by the KTA, particularly in terms of keeping the level of support from all the Track communities that they have worked so hard to gain over the last few years.

While the KTA is working on gaining support from the communities at the local level, the level of support from other regional stakeholder groups is lacking. The tour operators involved in this study expressed their concerns about the lack of institutional capacity for the KTA to mediate between tour operator and community needs. In the vignette that follows, Catherine's experiences are reflected to highlight some key concerns in the KTA's process of managing priorities.

The issue of balancing the needs of trekkers and the needs of the community members came up in the interview with the CEO of the KTA. He emphasised the tough decisions in being able to mediate between what trekkers want and what communities want. He spoke about a number of instances when communities had thanked him and the KTA for improving bridges along their portion of the Track. He also said that communities wanted increased infrastructure improvement to make it easier to walk to and from their gardens, between villages and down to markets in the capital city (CEO KTA). However, the CEO is constantly reminded from tour operators and trekkers that demand is for the original experience, the rough and rugged adventure:

> if it means we swim across the river without the bridge, it's part of the adventure and experience that is the Kokoda Track. (CEO KTA)

For the KTA, it is a constant negotiation process and balancing act between the demands of stakeholders (KTA Chief Advisor).

Institutional capacity to balance stakeholder needs is only one part of the concerns from tour operators both locally and internationally based. An even bigger concern that was raised by an international operator was the KTA's lack of legislative support from the national government. In any co-management arrangement, the bridging organisation charged with coordinating multiple stakeholders needs to have a favourable policy environment to support their work (Berkes 2008). Currently, the KTA operates without any legislative framework to facilitate mediation between stakeholders. On one side, the KTA is predominately reliant on tour operators voluntarily abiding by a code of conduct. On the other, they rely on Track communities' satisfaction of tourism benefit sharing. Without legislative control to enforce decisions, the mediating role of the KTA is volatile.

The code of conduct itself was raised as an area of concern as one local operator believed that the code was established in Australia, with very little input by the PNG people or the local PNG tour operators (Tour Operator 2). This was confirmed by another tour operator who stated that several big Australian operators travelled around Australia to Canberra and Brisbane and met with the Australian Government members who were involved and paid with their own money to get the code of conduct established (Tour Operator 1). While the code does appear to be functioning, one tour operator believes the KTA lacks the 'spine up its back' to make hard decisions and to enforce them, such as enforcing licensing, maximum group sizes and bag weights.

Research suggests that a wide variety of participatory management structures function and can effectively manage natural resources (as presented in Chapter Two). Despite the lack of a formal co-management arrangement, where roles and responsibilities of all stakeholders are clearly defined and agreed upon, the KTA as a bridging organisation has been established and is currently working on balancing the needs of the communities and the tour operators in order to co-manage tourism on the Track. In some circumstances, one agency or stakeholder group has a large portion of control, however, in this case it appears a more egalitarian approach is being implemented and a board of directors exists to represent the stakeholder groups involved in Track management. Within this approach, the KTA appears to have blended more Western

styles of management, such as the board of directors and the establishment of ward development committees, with more traditional management methods such as the process of community consultation and the monetary payments recognising traditional landowners of the Track.

4.2.6 Summary

What does the nature of tourism development on the Track and the relationships between stakeholder groups contribute to the discussion on CPRs and co-management? Currently, tourism on the Track provides the context for researching and analysing relationships and collaboration highlighting embryonic characteristics of co-management theory. Tourism emerged as a key finding and central thread that binds regional stakeholders. Findings presented in this part suggest currently the only legislative framework influencing tourism on the Track is customary landownership. While the board of directors exist to function as a management framework within the KTA, ultimately the landowners of the Track hold decision making authority. Consequently, the ability of regional stakeholders to informally negotiate with landowners has resulted in the growth and management of the tourism industry. Part 2 also discussed the advent of tourism and how it has brought change to the lives of the communities with an increase in income earning opportunities through community business supporting the trekking industry. Additionally, increased international exposure of the region has meant donor and philanthropic organisations have begun working in the area. This part of the findings chapter also touched on the introduction of the Australian Government stakeholder views through the employees deployed to reform the KTA. Part 3 of this chapter will now discuss national level management and discuss the formal role of the Australian Government as well as other key influences on national level management.

4.3 Part 3: National Management: Values and International Protection of the Track

The final part of this chapter explores national management[22] as the final level of co-management in this study. To begin with a key priority of the DEC in PNG is identified; a new protected area policy for PNG. Following this is a discussion that will address the role of international stakeholders in national management. The last section will present some of the challenges for national management. The findings in this section were collected through a focus group with seven representatives all working on the Kokoda Initiative (KI) in some capacity. There was a mix of PNG and Australian Nationals working on the KI. In addition, other participants who work with or for the two key partners provided their perspectives on the nature of national management. Specific relevant literature on PNG is also included to help contextualise national management and some inherent challenges identified within national administration.

4.3.1 Joint Understanding: Partners in National Level Management

At the national level, there are two key partners that are working together towards developing an appropriate management plan for the Track and surrounding region. The PNG Government has sought the assistance of the Australian Government through signing two consecutive joint understandings aimed at assisting in managing, developing and protecting the Track and the wider region. These two governments have been working together in the region for a number of years and established the KI in 2008; an initiative made up of the two government taskforces to coordinate and implement the activities under the joint understanding.

The Australian Government may seem an unlikely partner to some in the development and management of Papua New Guinea's premier tourist destination. However, the Australian Government's historical and political interests in this region stem from the significance of the Kokoda campaign in the Australian WWII narrative. Between 2007-2009 the Track was in the Australian media spotlight. The Australian mining company,

[22] National management is understood in this context to include both the PNG national government agency and the Australian national government agency in partnership (explained in 4.3.1). While it is acknowledged that Australian Government employees are not PNG 'nationals', within the nationally led Kokoda Initiative (KI), Australians and the Australian Government play an important role in guiding and influencing national management objectives in PNG. Therefore, for the purpose of this discussion, national management will be considered as both PNG and Australian partners in co-management.

Frontier Resources Limited pursued land agreements with local landowners to build a copper mine at Mt Kodu in the village of Naoro, located on the Track (Australian Associated Press 2007). Shortly following the cancellation of the mining lease, the national government placed the Kokoda Track and Owen Stanley Ranges on their Tentative World Heritage List. In this endeavour, the Australian Government afforded funding to PNG to pursue the feasibility study for potential World Heritage status for the region (Wearing et al. 2009). This began a commitment from the Australian Government to the PNG Government to protect the Track and the first joint understanding was signed in 2008 between the two countries (Papua New Guinea Government & Australian Government 2008).

The vision of the first joint understanding was the: 'sustainable development of communities along the Kokoda Track corridor, and protection and sustainable use of the natural and cultural resources of the broader Owen Stanley Rangers (Papua New Guinea Government & Australian Government 2008, p. 1). Through this arrangement, attention was focused on improving the livelihoods of the communities of the Track, preservation of the historic values of the Track, and conservation of the wider Owen Stanley Ranges for potential future power and water projects along with an assessment of the potential for forest carbon benefits. Finally, the joint understanding stated a key goal was the pursuit of a feasibility study for the potential World Heritage nomination of the Kokoda Track and Owen Stanley Ranges region (Papua New Guinea Government & Australian Government 2008).

The KI,[23] developed out of the first joint understanding between the PNG and Australian Governments, has five key goals (Papua New Guinea Government & Australian Government 2010):

> 1: A safe and well-managed Kokoda Track, which honours its wartime historical significance and protects and promotes its special values
> 2. Enhanced quality of life for landowners and community through improved delivery of basic services, income generation and community development

[23] The KI consists of a number of different delivery partners throughout the Australian and PNG administration. Australia has several government departments that make up the Australian taskforce in the KI, including the Department of Sustainability, Environment, Water, Population & Communities (DSEWPaC), Prime Minister & Cabinet (PM&C), Foreign Affairs & Trade (DFAT), AusAID, Veteran's Affairs (DVA), Resources, Energy & Tourism (DRET), Climate Change (DCC) and Defence (Papua New Guinea Government & Australian Government 2010).

> 3. Wise use and conservation of the catchment protection area, including the Kokoda Track and its natural and cultural resources and values
> 4. Building national and international tourism potential of the Owen Stanley Ranges and Kokoda Track Region, supported by a possible future World Heritage nomination.
> 5. Working with communities, landowners, industry and all levels of government to ensure that activities under the Kokoda Initiative are sustained into the future

In 2010 a second, five-year joint understanding was signed between the governments, with a revised common vision working towards 'sustainable development of the Owen Stanley Ranges, Brown River Catchment and Kokoda Track Region and protection of its special natural, cultural and historic values' (Papua New Guinea Government & Australian Government 2010, p. 2). The evolution of the KI has resulted in a change of focus towards the region more generally, not just the 'Kokoda Track Corridor' as stated in the first joint understanding. In particular, exploratory biodiversity studies were completed on the Owen Stanley Ranges and Brown River and have resulted in PNG's increased interest in protecting a major asset; Port Moresby's valuable clean water source (KI Stakeholder forum).

> The priority areas in Central Province for future development of hydro-power and water supply for Port Moresby' make up the centre of the Kokoda Track Interim Protection Zone (another feature of the second joint understanding). The northern end of the Track is not included in the interim protected zone, potentially because that area is not being targeted for its biodiversity value, although both governments are 'committed to ensuring the entire Kokoda Track is looked after. (Papua New Guinea Government & Australian Government 2010, p. 4).

The five key goals of the KI have remained the same under the new 2010-2015 joint understanding.

The two partners in national management are currently focused on sustainability and protection for the Track and the wider region. Through the KI, a number of projects are managed through different KI delivery partners. The next section will examine the work of national level partners in determining priorities for the PNG Government with consideration of the international stakeholders and the role they play in national level management.

4.3.2 The Government's role and priorities in Managing the Track

This section will explore the current role of the national government in PNG and their priorities in terms of natural resource management for the Track. An exploration of the government's position on protected areas will also be canvassed which informs the DEC's challenge of formal protection for the Track. A key challenge identified by the DEC is the lack of sustainable financing for protected areas (Department of Environment and Conservation 2011). However, from an examination and analysis of the DEC Discussion Paper on the proposed policy reform and data from the focus group, the issue of customary land ownership appears to also be a significant consideration in land management reform due to its central role in local and regional management of the Track.

The PNG Government has an important role to play in terms of rural development for communities, protection and sustainability of PNG's premier tourist destination, the Kokoda Track (Department of Environment and Conservation & Department of Sustainability, Environment, Water, Populations and Communities 2012). Additionally, the PNG Government also has commitments in terms of their bilateral agreement with Australia through the Joint Understanding. The DEC is the lead PNG agency involved in the KI and currently their focus is on the overall management and preservation of both the natural and cultural values of the Track. The DEC as an agency, however, is focused on protected areas; 'the department wants better protection, better management for its protected areas and more areas protected whilst development is happening' (*non local* DEC Representative 2). Presently, this department, like many in the Pacific, lacks the institutional capacity to reform failed policies for biodiversity protection (Denham 2012). In lieu of this, specific technical and financial assistance from the Australian Government has been directed to DEC under the KI in order to build the capacity of this agency.

Protection of the region is a primary goal for the DEC. The listing of the Kokoda Track and Owen Stanley Ranges on PNG's Tentative World Heritage List suggests that the DEC envisage nomination would be a possible method for protecting the region. Hence, the possible World Heritage nomination has appeared as a key goal of the second joint understanding and consequently, a World Heritage Advisor was engaged to conduct a

study of potential heritage significance. While the results of the World Heritage feasibility study commissioned under the first joint understanding remain unavailable to the public, the annual report from the KI for 2011-2012 (Department of Environment and Conservation & Department of Sustainability, Environment, Water, Populations and Communities 2012) states that there exist values that are likely to be of international significance and potential for World Heritage status.

With this in mind, the goal of conservation and specifically formal protection of the Track has progressed. In late 2011, a discussion paper released by DEC highlights the need for the development of a new protected area policy for a National Protected Area System (NPA) for PNG. The opening statement from the now former Minister for Environment and Conservation reads:

> the greatest impediment to protecting biodiversity in PNG is the lack of sustainable financing for protected areas. Landowners cannot be expected to give up their rights over areas of land or water without seeing benefits in the form of service delivery or support for economic development. (Department of Environment and Conservation 2011, p. 2)

The discussion paper highlights currently, characteristics of protected areas in PNG include ad hoc processes, a lack of provincial and local level government support, ineffective legal frameworks and a mismatch between conservation policies domestically and conservation commitments made to international biodiversity treaties, such as the Convention on Biological Diversity and World Heritage (Department of Environment and Conservation 2011). These challenges to protected area reform have direct relevance to the discussion of national management in this thesis, particularly the way in which national management understands the future role of local level stakeholders in protected area management.

The issue of the important role to be played by customary landowners in new NPA policy, effectively PNG's vision for natural resource management and biodiversity conservation across the country was raised in the DEC discussion paper. The DEC (2011, p. 6) articulates that 'NPAs will be managed by landowners and considerable effort and funding support will be needed to ensure landowner communities can meet the obligations that flow from having a protected area gazetted over their land.' To this,

in the review of existing legislation for protected areas, the Conservation Areas Act 1978 has been put forward in the Discussion Paper as having the most potential to provide the legal framework for developing NPAs; this legal framework requires the transfer of land rights from communities to the State to 'regulate development in the Conservation Area' (2011, p. 10). This will effectively remove the community-based legal system. While the issue of whether or not this impinges on the Constitution (in terms of the continuation of customary landownership) is addressed in the DEC discussion paper and the need for further analysis of legal options is flagged, the significance of a decision that removes power and relegates the role of customary landowners down to *managers* of their land is of sizable consideration in the context for the future of the Track communities.

A decline in community-based legal systems has been noted in reference to World Heritage management, and Mumma (2004, p. 43) specifically states that the relationship between community-based and state-based hegemonic systems has been antagonistic: 'the hegemonic state-based legal system has either undermined community-based legal systems to extinction or it has reduced them to a peripheral management system, often ineffective and secondary in status'. However, despite this decline in community-based legal systems, Mumma (2004, p. 43) argues that it is widely recognised that 'state – based systems, on their own, are incapable of ensuring the holistic and sustainable management of World Heritage'. Unlike the lengthy political process of reinstating community-based legal systems which is believed to be necessary in some places to formalise and centralise the role of local residents and resource users (Mumma 2004), customary landownership, as a community-based legal system is still alive and active in PNG. Furthermore, the Convention 'acknowledges in its implementation the recognition of traditional management systems, customary law and long established customary techniques to protected cultural and natural heritage' (Rossler 2004, p. 45). A question then comes to mind as why the NPA policy would require the transfer of ownership to the State?

The development of a new protected area system for PNG is directed at nation-wide policy reform. However, importantly the technical and financial support for the delivery of this discussion paper was provided under the KI (Department of Environment and

Conservation & Department of Sustainability, Environment, Water, Populations and Communities 2012). This means that the outcomes of the discussion paper and the progress towards policy reform are of direct concern to this thesis and the sustainable development of the Track. To this point, the Assistant Secretary of Australia's DESWPaC and the Deputy Secretary of PNG's DEC stated their aspirations are 'the gazettal of the IPZ (*Interim Protection Zone*) as a protected area, more inclusive involvement of the Central and Oro provincial administrations, greater community involvement in the management of the PA (*protected area*) and greater inclusion of other supporters such as the tour operators, NGOs and church groups' (Murphy & Kalim 2012). To assist in furthering the new NPAs policy and due to the specific interests of the Australian Government, Australian Government counterparts have been working in DEC on issues of protection and specifically the development and capacity building of the World Heritage Secretariat (*non local* DEC Representative 4).

While capacity building of DEC is ongoing, the issue of timeliness was raised as a concern by some participants. On the issue of the proposed NPA policy, the KTA Chief Advisor commented saying: 'I would imagine you'd probably be looking somewhere between 5-10 years before there would be legislation ready for presentation'. Following that, acting out and trialling the new policy will take time. The Australian Advisor to the PNG World Heritage Secretariat stated that when the reformed policy is complete and a revised governance approach to World Heritage is in place in pre-existing World Heritage Areas, only then will the option of nominating other sites for designation be considered (*non-local* DEC Representative 4). Further, she pointed out that the Track is not on the top of the list for World Heritage nomination, as there are other sites on PNG's Tentative World Heritage List that have advanced further in the initial stages of protection and, importantly, in gaining support from local landowning communities (*non-local* DEC Representative 4). These sites (which were not explicitly identified in the focus group) will be the focus for newly reformed policy and implementation first.

While the role of improving governance structures is of strategic importance to DEC, one DEC representative stated that time is crucial and is running out in terms of gazetting a protected area over the Track. The issues of introduced species and the lack of controls to prevent destruction of the natural ecosystems is a real concern that needs

to be addressed now, he stated in the focus group (*local* DEC Representative 1). He articulated that currently, without any formal gazettal of the region, the government lacks the control to prevent local and non local users (mainly tourism users) of the Track from bringing in introduced species. Specifically, there are:

> problems in the management of the Track. Problems like, we don't want introduction of weeds, invasives along the Track and development options, like improving livelihoods is pulling these things in, to be introduced, but then the department said too, what control mechanisms, where we can control? Don't introduce rabbit, don't introduce goat, you know, they are killing these natural ecosystems of the Track and the people, because the people want them they introducing them, but then we have to get down to the really controlling these invasives. (*local* DEC Representative 1)

With an approximate time frame of 5-10 years in order for the NPAs legislation to be finalised, based on the Chief Advisor's experience, the ecological system of the Track will continue to be at risk.

The national government of PNG is working towards formalising a protected area policy for the conservation of the country's natural and cultural resources. At this stage, there is very little evidence from this case study to suggest that the government is engaging local communities, the legislated customary landowners, in the early phases of policy development. While numerous programs with DEC have highlighted the need to consult with communities and other key stakeholders, specifically in relation to the KI and associated projects, the government appears to be currently focused on planning for, rather than with communities. The proposition of removing ownership under the Conservation Areas Act is an example of this. Another challenge for the PNG Government that was identified in this research is the role of international stakeholders in domestic policy decisions. This theme will be explored in the next section.

4.3.3 International Stakeholders and PNG's Obligations

The role of international stakeholders in forming PNG's obligations is an important component to understanding national management priorities. The national government of PNG have signed a number of international conventions and treaties working towards biodiversity conservation that require attention to natural resource programs currently in place. Often these international stakeholders become involved and can be influential to

the process of domestic conservation. This section will present findings and discuss the role of international stakeholders on biodiversity conservation in PNG as it influences the direction of national management of the Track.

On the international stage, the PNG Government has made a commitment to a number of conservation treaties in the pursuit of biodiversity conservation. In particular, the DEC's new strategic direction considers the Millennium Development Goals (specifically MDG 7 on Environmental Sustainability) along with 'the three Rio Environment Conventions and the Global Environment Facility' (Department of Environment and Conservation 2011). PNG is also a signatory to the Convention on Biological Diversity and the World Heritage Convention (the Convention). The participation of the PNG Government in international conventions and treaties has a direct influence on the nature of strategic direction for the DEC (2011). Therefore, consideration of the role of international stakeholders is important in national management for the Track as a potential WHA.

PNG ratified the Convention in 1998 and consequently committed to protecting their unique biodiversity through the designation of WHAs. Since this time, however, only one site has been inscribed on the World Heritage List, and according to the employees of the World Heritage Secretariat and recent literature on the site, there is still a great deal of work to be done towards creating an effective World Heritage governance strategy (Denham 2012). In accordance with the acceptance of Kuk as a WHA, there is a requirement that an effective governance strategy be developed. This would also be required for the Track if Goal 4 of the KI is to be pursued. One DEC representative commented that:

> There is a trend in the Pacific for listing and then trying to retrofit a management practice. (*non local* DEC Representative 1)

There was consensus between focus group members that despite the push to gazette WHAs, PNG was committed to first establishing a favourable policy environment for World Heritage to sit within.

The issue of developing effective World Heritage governance in PNG was discussed at length by DEC participants; however the current focus for the DEC World Heritage Secretariat is to improve governance at the existing WHA (*non local* DEC Representative 4). As specifically discussed by Denham (2012), the Kuk WHA still lacks a complete management plan and governance strategy and the KI is channelling capacity building efforts into the PNG World Heritage Secretariat to be able to design and implement a new governance approach for this site and for the department generally. While 'participatory approaches' were advocated as a method to working with and involving customary landowners of the Kuk WHA, no information could be provided on the process of implementing these approaches.

The influence of the Convention, as an international stakeholder, has potentially impacted the direction and focus of the KI. While funding for institutional capacity building of the DEC comes from the KI, the focus of this support is currently geared towards the one inscribed WHA in PNG. This may be due to the requirements of the inscription of the site by the World Heritage Committee and the lack of existing internal capacity in the department.

Another international stakeholder to consider in the process of national management is the United Nations Development Program's Global Environment Facility. In 2011, the DEC was awarded funding from this organisation for a 'major program of protection of terrestrial biodiversity including the Owen Stanley Ranges and the Kokoda Track region' (Department of Environment and Conservation & Department of Sustainability, Environment, Water, Populations and Communities 2012, p. 9). According to the KI Annual Report, this five-year program will be implemented by DEC in collaboration with the KI. This funding program will mean another stakeholder group to consider and include in national level management of the Track. In order to determine what influence the Convention may have in the process of domestic policy development (Rakic & Chambers 2008) the DEC may need to consider what role this international stakeholder plays.

The sphere of influence of international stakeholders may be seen in the analysis of national level management. International stakeholders often enact significant influence

domestically through funding allocation (Rakic & Chambers 2008). At the time of writing, it is unclear what influence this funding source will have on policy reform. However, it appears to be one of many challenges facing national management and their priorities for the Track. The next section presents further findings and discussion on other challenges facing national level management.

4.3.4 Challenges for National Management

Compounding the NPA policy reform underway and the evolving nature of the KI explored in section 4.3.1, along with pressure from the international community, there are several other challenges facing DEC that arose from the case study. Some of the key challenges facing the PNG Government include the changing role of the Australian Government, the inactive role of the provincial government, community perceptions of both the PNG and Australian Governments and the ongoing support of Australia and their contracted government employees. These challenges will be explored next in order to contextualise the complexities facing national management of the Track.

One challenge for national management that arose in the focus group is the lifespan of the KI. A representative from the focus group explained the, 'Kokoda Initiative is in a transition phase' and a period of change (*non local* DEC Representative 1). She stated that it was initially pressures from the Australian public directly following the 2009 plane crash at Kokoda that the Initiative was set up to focus on the safety of Australian trekkers along the Track (this is contrary to what was discussed in 4.3.1). She believes this focus has now changed and the KI is working towards identifying, within PNG systems, sustainable options for development of the region (*non local* DEC Representative 1). Finally, she went on to say that Australia is always going to have an interest in PNG, however, it was not clear what form that would take (*non local* DEC Representative 1). This participant identified the nature of the work of the KI is changing, and at this stage, it is unclear how the KI will change going into the future.

Furthermore, the Australian government plays a huge financial role in national management of the Track and changes to the KI will have implications for current programs. Funding through the KI is filtered through its delivery partners, with the

KTA a large recipient of financial support. The Safety Manager at the KTA spoke about the dependency on Australian Government funds to do his job.

> Depending on the level of funding back in Canberra, that will determine what happens in the future. (KTA Safety Manager)

However, what comes along with financial support is accountability. The KTA Chief Advisor explained the difficulties of this, stating 'that's 80% of my work, it's managing those (*Australian Governments'*) expectations'. Therefore, changes to the KI in relation to financing may be a challenge for national management in the future.

The Chief Advisor of the KTA spoke about the challenges that are coming for the future of the KTA as a result of national management changes. He states his posting is complete and he will be leaving PNG, and the new localised team at the KTA have some challenges ahead of them, a major one in particular being financing that comes from national management through the KI. He articulates that trying to explain the situation on the ground in PNG to Australian administration is difficult.

> The big ideas that we are trying to get through to Australia, that if this Track was anywhere else in PNG, the level of resourcing would be really small, and how do you justify in a society like this that really important funding that should be going into education, health, roads, hospitals, these type of things, that Kokoda Track is far more important. The reality is in my mind, the reality is that the Kokoda's Track is an Australian thing, it's the importance to Australia it's not that important to PNG people, it's really not, it's umm. Most Papua New Guineans wouldn't even know what it is, and if you speak to Papua New Guineans and you ask about the Kokoda trek, oh yeah it's that's Australia's thing it's not a PNG thing. So to expect PNG to invest serious money into the ongoing maintenance and management of the Kokoda Track is just not going to happen. So if, if the importance is with Australia then perhaps Australia has just got to put its hand up and say well this is a forever thing, if this is a part of the Australian story, which I believe it is the same as Gallipoli is and other places around the world, where Australia has already adopted that saying well look we'll always spend money on Gallipoli because that's a that part of our story, in my mind Kokoda Track is at that same level. So if it is on that same level then perhaps Australia needs to re think the way that it works and say right well, it is not part of Australia the same way Gallipoli is not part of Australia but we will support that host country because this is really important to Australia and we can't afford for it to fall over, we can't afford for it not to be shown the respect that it deserves because it is so important.. so that's really the big challenge is that what happens next Should it be just, look we accept as Australians that we need to have this fixed set of resourcing into the future, because if Australia doesn't do it, who's going to do it, no one else is going to do it. (KTA Chief Advisor)

The challenge of long term sustainable financing from national management is extremely important in the case of the KTA. This is particularly true due to the lack of PNG Government support legislatively and financially outside the KI (Chief Advisor KTA). Relying only on trekking permits is simply not enough to run the organisation, the Chief Advisor said, and a decision about the future sources of finance needs to be made soon.

A further challenge identified by participants for national management is the involvement of the Central and Oro Provincial Governments in the overall management of the Track. According to the CEO of the KTA, the provincial administration provides the biggest challenge in terms of continued engagement and support, particularly financial support, for the management of the Track. Other stakeholders also raised this lack of cooperation from the provincial government level. The Deputy Secretary of DEC stated that a future goal for the KI is the increased engagement of both Central and Oro Provincial administration. The Australian Government has invested substantial funding into upgrades of roads and airstrips that are under the jurisdiction of the provincial administrations of both the Central and Oro Provinces. However, there is a lack of commitment from the provincial government in terms of engagement with the KTA and KI on these issues and taking control sustainably of managing assets that have been provided. 'At this stage, they know they're part of the arrangement but they're not keen to engage with what's happening and with the activities' says the KTA CEO. This challenge for national management is especially important to consider with the potential changes to the KI in terms of technical and financial support for ongoing sustainability of the Track.

The issue of stakeholder perceptions is another challenge that emerged from the data analysis. Stakeholder perspectives play a crucial role in the development of relationships. In co-management, two of the key stakeholder groups that are reliant on positive perceptions that help develop strong relationships are the communities and the State; in this case, the local customary landowners and KI national stakeholders. In this study it was difficult to elicit perceptions of the communities from conversations with

national government employees; the focus group participants most often referred to 'community' as a homogeneous entity, differentiating only by cultural group (Mt Koiari or Orokaiva) or by village. However, most national government employees spoke about the future engagement and consultation that will have to take place with communities and landowners in order to progress with formal protection. From the most recent KI annual report, there is little information to draw out the perceptions from program delivery partners (KTA or KDP) in relation to their work with communities. Despite the last goal of the KI being focused on working with communities and landowners (among other stakeholders), there appears to be little project work carried out specifically in and with communities presented in the annual report.

Community perceptions of the government came through strongly in data analysis and provide important information in assessing the current relationship between the two parties. It is important to note that throughout these conversations with local level stakeholders in relation to the PNG Government, many layers of administration were canvassed as simply government. Community representatives spoke generally in terms of the role of the government, where their view of the government may include one or more layers of administration, including local, provincial and national government. Unless the respondent specifically referred to a level of government, the comments were taken to mean the roles and responsibilities of the whole of government generally and the term is italicised in this section. In future studies it would be important to specifically tease out which department or levels of government participant's are referring to better understand the concerns of the communities.

Corruption and lack of provision of basic services were both key themes raised by a number of community members. One community representative explained:

> we need changes there…but our government...nah it's corrupted…it's now at the moment, our government's corrupted. They don't give services to the rural areas…road access, since before when the Australian look after Papua New Guinea, they build roads for the rural areas, like my village, so they plant rubber trees there, they put cattle farming there but when the Papua New Guinea government get independence, when the Australians left, and now its no development taking place since the independence until now. We elected our members to go to the parliament and talk for village people and of course but they don't do that. They think of their own. (Sogeri Representative)

The priorities of the PNG Government that are being questioned in the comment above were a theme that was brought into question frequently throughout the data gathering process. What became ambiguous was which level of government or government department the participants believe should be doing more for the people of the Track. Community participants used the term *government* in a general sense infrequently and when the conversation was shifted towards the involvement by the national administration or specifically the DEC, most respondents had little to say. 'They never come' a Manari representative (1) said. In one conversation, a community member was asked what sorts of changes would they like to see in the future, and her response was:

> We are concerning about our PNG, our big concern is in PNG government. But right now we are in a rural area and you know government can't concentrate on us like, this way, living in the bush like this. Those who are in cities and stations in the rural areas they only concentrate for those people but those like us now we are living here, they never concentrate on us. (Alola representative 1)

The perceptions and concerns about the *government* by communities is vital information that needs to be brought into a discussion of collaboration. Communities in the case of the Track appear to have very little voice in terms of the national management plans for sustainable development. If any proposed consultation with communities is going to take place, as suggested by national management representatives, certain perceptions will need to be overcome in order to begin developing working relationships with some communities along the Track.

In addition to community perceptions of the *government* generally, some community representatives gave their perceptions more specifically of the KTA. Although the KTA does not have a government legislative framework, they are still a PNG Government established Special Purpose Authority and are considered by some to be a government agency. On a positive note, some community participants recognised the efforts of the KTA in supplying radios to improve communication along the Track. The KTA has placed a two-way radio system in each village along the Track. While some seem to be in working order, some community representatives explained that the radios were not maintained meaning communication with family and friends was made difficult once again. On a more negative point, a common sentiment from community representatives was that the KTA provided little in the way of real improvements to infrastructure and

increased services to the villages along the Track. Certain community representatives pointed out that they felt the KTA did not play a role in helping the communities develop.

While the vision of the KTA does include the goal of improving the lives of the communities, it has been only since the KTA reform that the organisation has moved more into the space of livelihood development projects. With increased funds from the Australian Government through the KI, the KTA has branched out into different roles other than its main focus on managing tourism on the Track; this includes the appointment of a full-time livelihoods officer to evaluate and provide new livelihood opportunities for communities. Additionally, since the reform, there has been a KTA Safety Officer from the Australian Government employed to design and manage large scale safety upgrades to provincial infrastructure at both ends of the Track. Through the diversification of tasks that now fall within the suite of activities the KTA provides, confusion about the actual role of the KTA is apparent. Some community members compare the small livelihood projects and the safety upgrades being run by the KTA with much larger scale development projects run by the KTF and KDP. It could also be conceived that improved infrastructure (such as the upgrade to the Owers Corner Road) is a task that the *government* would undertake. From this, the evolving nature of the KTA and its activities has potentially caused confusion in the perception of some communities and is being interpreted and perceived by them in a negative way.

While some communities spoke somewhat negatively about their perceptions of the PNG *government*, others compared the levels of support between the PNG and Australian Government in terms of programs on the Track. These community members had some strong opinions on the priorities of their *government* and the changes they would like to see. The general feeling was that the role of the *government* was not being fulfilled; in fact, the Australian Government was doing more in terms of providing basic services and overall commitment to rural development of the Track. When speaking with one community member about this issue, he responded:

> they (*the PNG Government*) did not come here and talk to the community or get relationship but the um….actually the Australian government is the funding for the whole tracks here... but the guys who were controlling that at Moresby they used to misuse them… so no one was coming here. (Naduri Representative 2)

The issue of corruption in the *government* as discussed previously continues to be a topic of conversation and is shifting the interpretation of the role of the Australian Government in the eyes of some of the community members. Another community member from the same village identified that the Australian Government has provided more support through the KDP recently than the PNG Government. Communities associate the KDP as a livelihood source that is providing them with basic needs and services that they believe is the role of their *government*.

> Like most of the villages at the moment are saying that we are lucky to have the Track because nearly all the services, projects that are run along the Track are run by…KDP the projects and like organizations like KTF and KDP they are the ones who are supporting the locals along the Track so we were saying that we are lucky for the last 5 to 10 actually 10 to 15 years we have not received anything from the national government in terms of health services, health and education. (Naduri Representative 1)

Although these perceptions of the Australian Government are encouraging in terms of the influence of livelihood programs provided by the KDP, the KDP is a delivery partner of the KI which is a joint government program. While the communities believe the work of the KDP is solely supported and implemented by the Australian Government, the adverse perception of the PNG Government will likely continue to grow.

A further challenge for the PNG Government that emerged from the DEC focus group is working with the Australian counterparts positioned within the agency. Several differing views and voices were presented during the focus group discussions and conflicting opinions as to what the next step forward for the department should be. This highlighted the vastly different attitudes of those Australians and Papua New Guineans working together. One PNG representative began by stating that:

> before we do anything collaboratively (*that is, with communities*), that area need to be declared and gazetted as some form of protected area...if we have it properly declared and gazetted then we have already set up an area for us to work uninterrupted...we don't want interference. (*local* DEC Representative 1)

On the contrary, an Australian representative argues, that before a protected area is established, there needs to be clear identification as to what it is protected. He believes

that there are many unexplored values that need consideration, including cultural, social, natural and environmental values to name a few (DEC Representative).

These different opinions in relation to management approaches and sustainable development bring attention to the current lack of cohesion and consensus on the path forward for the agency within the DEC. One DEC representative voiced his concerns with the lack of control over resources believing that in order to move forward there requires the gazettal of a protected area and possibly the acquisition of land use rights from customary landowners, the alternate approach advocates further studies and inclusion of more stakeholder voices before pursuing protected area establishment. This issue of a contested space may be juxtaposed with Rakic and Chambers' (2008) discussion exploring the tensions between the national and the 'universal' within the World Heritage context. They write that 'having begun as a system of identifying, protecting and preserving heritage of 'outstanding universal value', which represent and belong to all humankind, it has essentially become an accreditation scheme' (Rakic & Chambers 2008, p. 146). While differing approaches to natural resource management exist at the national level, customary landownership appears to remain a central point of discussion. At the time of writing no information is available on the outcome of the potential NPA discussion paper, and there appears to be a lack of clear direction and consensus on how DEC can engage with Track communities on the issue of a potential protected area. This points to the overarching aim of this research: exploring how community voices are heard in the development of a potential WHA for the Track.

4.3.5 Summary

The joint understanding between PNG and Australia symbolises the commitment to co-managing the Kokoda Track. From this, the involvement of the Australian Government, in partnership with PNG Government agencies established the KI. The work of the KI delivery partners, such as the KTA and KDP, has contributed significantly to management of the Track at the regional level (as presented and discussed in Chapter Five). However, this discussion outlined many challenges ahead for national management, including the influence of international stakeholders and their policy frameworks that may or may not be effective in the context of PNG.

Technical and financial assistance through the KI has enabled a focus on policy reform for protected areas and new governance approaches for World Heritage at the national level. However, as Part 3 has illustrated, there are a series of challenges for national management. Particularly the role of customary landowners in nationally led projects. This highlights the need for a close examination of the existing to local, regional and national layers and the essential links between them in Track management. To do this, Berkes (2008) conceptualisations of co-management theory will be used to explore and evaluate management at the three vertical layers. This will potentially shed new light on how incorporating pre-existing and functioning co-management arrangements can create a more appropriate and effective holistic approach to developing World Heritage governance and management plans.

4.4 Conclusion

This chapter presented the findings and discussion of the case study of the potential WHA, the Kokoda Track. Through data analysis and interpretation, the findings were presented and discussed in three parts to explore the nature of collaboration and relationships at local, regional and national levels. In doing this, the chapter has provided an understanding of each horizontal level in this complex case. The next chapter will present the theoretical discussion using horizontal and vertical linkages to draw conclusions and reflect on the use of co-management as a tool for researching collaboration in a complex social ecological arena.

Chapter Five: Interpretation, Discussion and Implications

This thesis has used the case of the Kokoda Track to investigate collaboration and co-management between stakeholders at multiple levels. Findings and discussion in Chapter Four demonstrated how the Kokoda Track stakeholders naturally organise and define themselves in relation to one another and this information forms the basis of three levels of co-management (see section 4.2.1). These layers of co-management can be considered 'nested' levels of governance that make up the complex social-ecological action arena. This could be considered step one in Carlsson and Berkes' (2005) six step scheme of co-management, where they argue the first step to understanding the process of co-management is to explore the action arena. Exploring the action arena provides one way to operationalise Carlsson and Berkes' methodology of co-management theory that enables the analysis and presentation of findings on the horizontal and vertical linkages of governance. The discussion in this chapter contributes to the exploration of the complexities within the Kokoda Track action arena that guide natural resource management decisions.

Existing research suggests that the hallmark of successful co-management is at least one strong vertical link between local residents and resource users and the government (Berkes 2008; Borrini-Feyerabend & Jaireth 2004; Folke et al. 2005; Pinkerton 1989a). There is also agreement that this link must be more than consultation (Berkes 2008; Plummer & Armitage 2007c). However, more recent studies argue that there is often more than these two partners involved in co-management (Leys & Vanclay 2010). The co-management literature has shown that increasing numbers of recognised stakeholder groups results in several horizontal and vertical linkages that define co-management arrangements in social-ecological arenas. This contributes to increasing complexity in managing CPRs. As a result, empirical and theoretical research has drawn attention to multi-scaled actors and the linkages required to manage such systems and have pointed towards adaptive co-management as a possible solution (see section 2.5.3).

Berkes' work in the field of CPR management (Berkes, Berkes & Fast 2007; Berkes & Folke 1998; Berkes, George & Preston 1991; Berkes, Mahon & McConney 2001; Berkes et al. 2006), and particularly his conceptualisations of co-management theory

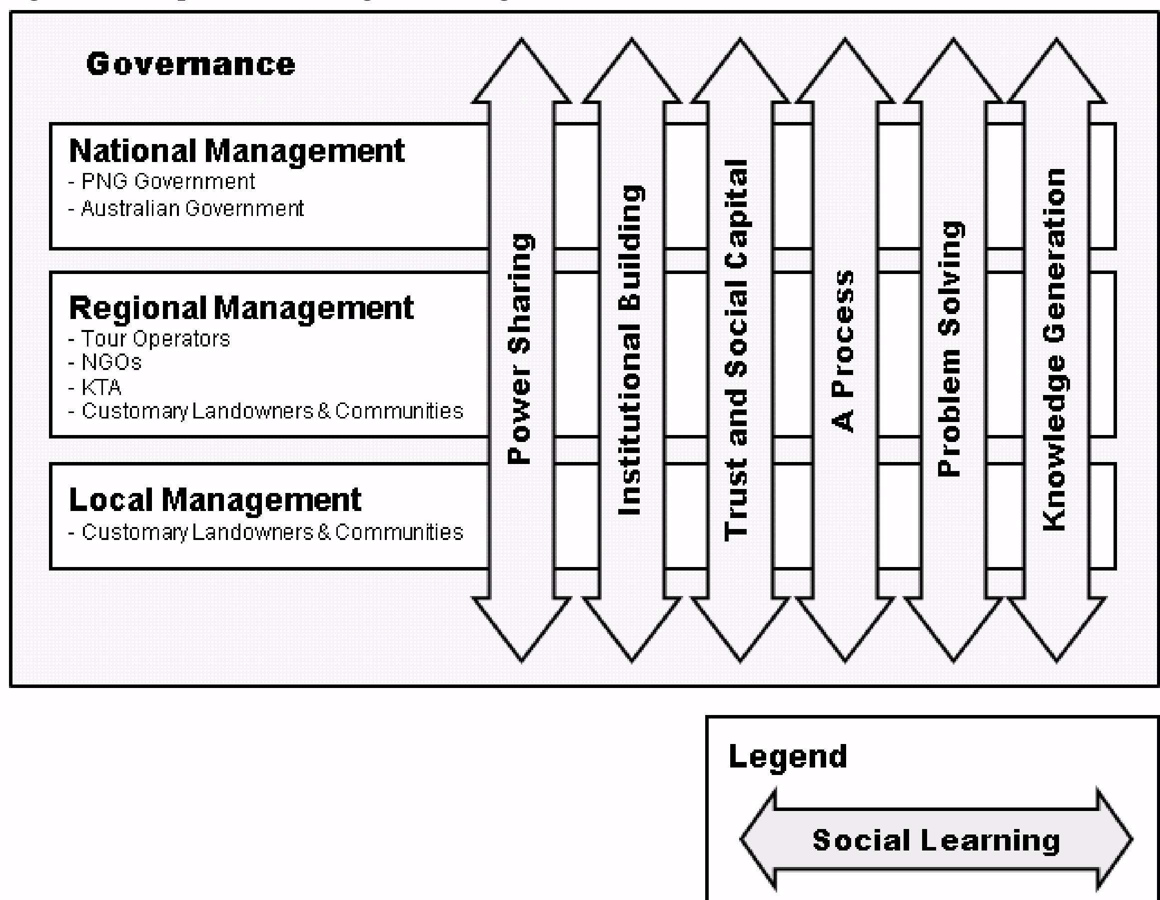
(2007a; 2008) will be used as the basis for analysis in this chapter. Some of Berkes' conceptualisations of co-management have been used in protected area case studies around the globe (Hill 2011; Marin & Berkes 2010; Raymond, Fazey, Reed, Stringer, Robinson & Evely 2010), however, this thesis takes a different approach and suggests arranging Berkes' eight identified conceptualisations into a framework for analysis will enable interpretation of co-management close to its inception in this complex social ecological arena. This framework also highlights how the voice of local level stakeholders can be heard in the different levels of existing management and indicates the important role of tourism within this complex social ecological arena. Analysis then provides a basis for understanding existing informal co-management and may assist in the development of an adaptive co-management approach to governance for conservation and potential establishment of a WHA for the Track. This chapter will end with a discussion of the implications for co-management theory and practice as well as suggestions for further research.

5.1 Theoretical Discussion: Horizontal and Vertical Co-Management

As discussed in section 2.5, there is an argument that co-management between local communities and the State 'holds much promise for integrating the interests of indigenous peoples with the national needs for protected areas in a way that will ensure continuing conservation of natural and cultural diversity' (Sneed 1997, p. 154). Co-management theory is suggested as a solution to managing CPRs, and with changes in approaches to natural resource management, it is increasing in its application in protected area management research (Hill 2011; Nursey-Bray & Rist 2008; Plummer & Fennell 2009; Schultz, Duit & Folke 2010). Moreover, with the evolution of co-management into 'adaptive co-management' (discussed in 2.5.3), Plummer and Armitage's (2007c) study identifies a number of critical questions for future research. Some of these questions include 'how does ACM (*adaptive co-management*) work along horizontal linkages and across vertical scales?' and 'how do we expand lessons learnt from specific sites or sectors to undertake an ecosystem or regional-scale approach?' (Plummer & Armitage 2007c, p. 6). This section will examine these questions in the context of the research questions asked by this thesis.

In order to understand adaptive co-management and apply it as a context specific framework for exploring complexity in the case of the Track a framework has been designed (See Figure 3). This framework illuminates horizontal and vertical linkages among stakeholders; firstly stakeholders are clustered based on findings and levels of governance are identified; secondly collaboration is evaluated horizontally using the same conceptualisations of co-management across the three levels; finally, it shows how vertical linkages can be identified as social learning across the levels of governance. These linkages and complexities, titled 'interconnected multi-level governance' (Leys & Vanclay 2010, p. 576), can then be considered and evaluations can be made as to how existing stakeholder relationships within and between different scales contribute to the overall management of this social-ecological arena. This framework has limitations as it has been developed using data from this research and is therefore not completely transferable to another context; it can however provide a framework to explore and analyse the linkages in cases where interconnected levels of governance may exist.

Figure 3: Adaptive co-management as governance



Chapter Four presented findings of the research and demonstrated that there is a broad range of stakeholders involved in horizontal levels of governance on the Kokoda Track. Part 1 of Chapter Four then explored how heterogeneous community groups interact and collaborate at the local level to manage natural resources such as building of houses and the distribution of customary land that are an integral part of community life. Part 2 of Chapter Four outlined the regional level collaborations where tourism provides the context for co-management and approaches to management change as stakeholders from differing cultural backgrounds become involved. Tour operators, NGOs, the KDP, the KTA and local communities all participate in regional co-management for the purpose of managing tourism and the natural resources that are the basis of the trekking industry. Chapter Four Part 3 presented the findings on national management and discussed two key stakeholders, the PNG and Australian National Governments, and the international influences that are contributing to national governance agendas. By classifying different levels of management and identifying stakeholder groups associated with governance, the discussion will now explore each level of co-management to classify and evaluate characteristics of collaboration.

5.1.1 Local Level Co-Management

Currently, 97% of all land across PNG is legally governed by community clan groups (Department of Environment and Conservation 2011) as it is legally required by the Papua New Guinean constitution (Muke, Denham & Genorupa 2007). This legislation enforces the protection of customary land ownership arrangements and subsequently has the ability to influence both regional and national management activities. This has major ramifications in the context of this thesis because the decision making authority on the Track exists at the local level. Curry, Koczberski and Connell (2012, p. 119) have noted that 'customary land tenure regimes…have the capacity to accommodate change while remaining grounded in local social and cultural institutions'. These regimes offer local people opportunities to modernise through forays into Western capitalist enterprise models, whilst being mindful of the traditional sense of place and culture. Based on the customary landownership tenure in PNG, it is likely that any decisions pertaining to the development of a protected area or WHA for the Kokoda Track would need to be explored at the local level. To explain how this type of decision might be made, this section outlines local level relationships and collaboration to

provide an understanding of how local level governance guides community life and natural resource management.

The findings in this thesis suggest that custom and tradition may form the basis for understanding how customary landownership and the associated social structures that work within community management may be characterised as adaptive co-management. This is similar to studies in Vanuatu (Bartlett, Maltali, Petro & Valentine 2010) and specifically in World Heritage in Vanuatu (Trau, Ballard & Wilson 2012; Wilson, Ballard & Kalotiti 2007) where research has also indicated that traditions and customs also play an important role in understanding community management processes. Despite no formal (signed or otherwise) co-management arrangement between local level stakeholders, horizontal linkages have been identified by exploring traditional clan based group structures and negotiations and the social makeup of villages along the Track. Within the Orokaiva and Mountain Koiari cultures, community social structures appear to be defined by relationships between communities and the land using tradition and custom (as presented in Chapter Four, Part 1). It was explained in Chapter Four that oral ancestral histories passed down, either patrilineally or matrilineally form the basis of this knowledge. It was found that dynamism and plurality are key components of local level co-management. The vignette titled 'Mark's description of the role of traditional decision making in the forming of his village' (see Chapter Four p. 98) provided an example of how dynamic community social structures influence natural resource management to fulfil community subsistence needs. Land management at the local level also facilitates community self-organisation into villages; negotiating land uses and collaborating to make village based decisions on development (presented in 4.1.3).

The relationships and social structures guiding land management on the Track bring to light the complexities of how customary landownership functions as co-management within local level governance. Table 7 overleaf presents the analysis and interpretation of these local level activities from the discussion in Chapter Four using Berkes' conceptualisations of co-management.

Table 7: Understanding Existing Co-management at the Local Level through Berkes' Conceptualisations

Berkes' Conceptualisations of Co-Management (2008)	Evidence from the Kokoda Track Case Study of Existing Co-Management at the Local Level
Co-management as power sharing	Power is shared through ownership and transfer of customary land rights between family members; e.g. power sharing generally revolves around land use ownership and decision making which occurs collectively at the village level
Co-management as institutional building	Local institutions are established and defined within villages; e.g. these social institutions are guided by tradition and custom and are made up of village leaders or elders (landowners) who co-manage the land, the village and the communities
Co-management as trust and social capital	Trust and social capital building is evidenced through the loaning of land between community members; e.g. lending individual and family-based land rights to new clans joining villages is managed through relationships based on trust and respect
Co-management as a process	Land management between communities is a constant negotiation process, as is the evolving nature of villages; e.g. new clans joining existing villages and the renegotiation of village land uses (housing, school, clinic)
Co-management as problem solving	Village leaders or elders work collectively to solve problems; e.g. both at the intra and intercommunity levels problems are solved using collective conflict resolution strategies
Co-management as knowledge generation	Knowledge sharing is natural resource based, with a focus on how to manage land for subsistence agricultural use, as well as custom and tradition; e.g. knowledge is generated both vertically, that is from grandparents to parents to children, and horizontally, that runs across clan groups.

The analysis and interpretation in Table 7 highlights how local level relationships are influenced by custom and traditional ancestral links to land to determine leadership roles and collaborative community processes. This is congruent with Lea's investigations into Melanesian axiology in PNG where:

> the individual always finds himself situated in a web of relationships. These relationships consist not only of relationships within the community, but also connections with ancestors, with other communities and with the entire environment. (1993, p. 91)

While relationships and collective approaches to land use decisions are widely employed at the local level, community leaders' traditional knowledge and positions of power weigh heavily on final decision making in the community. This is similar to a case study of the Kulubau District, Fiji, where it was found that:

> planning and processes that respect and reinforce the roles of traditional leaders, while providing opportunities for broad community engagement strengthen long term prospects of community-based natural resource management…in the Pacific, compliance with local resource management rules relies to a significant extent on respect for traditional authority and decision making processes. (Clarke & Jupiter 2010, p. 104)

The integral role that community leaders play in decision making appears essential to evaluating local level governance. This process demonstrates the complex nature of traditional land management of the Kokoda Track and the culturally context specific power asymmetries that need to be considered when collaborating with local level Track stakeholders.

While traditional decision making may have an important part to play in guiding natural resource decisions, the introduction of tourism and consequently the cash economy is changing processes around local level management (as discussed in 4.2.4 and explored in depth in *Peter's* vignette). The prioritisation of tourism businesses, such as guesthouses and campsites, over subsistence agricultural farming as well as the increasing profile and importance of the Kokoda Track as a tourist destination for PNG are examples of values that exist at the regional level. Plummer and Armitage (2007a, p. 842) discuss the importance of values and they note that values are culturally embedded; 'cultural distance can be a formidable obstacle, especially when there are perceptual differences pertaining to the environment and associated values'. These changing values and priorities may have an effect on the nature and practices of traditional land management as tourism continues to be a prominent part of daily life and subsistence activities continue to decline in favour of economic activities supporting the trekking industry.

By using the *faces of co-management* (Berkes 2008), traditional custom-based land use decision making can be characterised as an adaptive process that allows for the exploration of the local level action arena. Unlike other approaches, where co-

management has been explored and conceptualised through one or two of these lenses (Castro & Nielsen 2001; Leys & Vanclay 2010), or where conceptual studies have focused on streamlining co-management processes (Chuenpagdee & Jentoft 2007; Plummer & Fitzgibbon 2004), the approach in this thesis acknowledges that co-management is context specific, subjective and understood in different ways. The approach used here sits within the approach used by Carlsson and Berkes (2005) outlined in their schema, where the initial process of operationalising co-management is to understand the complex action arena. It is suggested that by illuminating and conceptualising relationships and activities in multi-levelled systems consistently using the same lenses, commonalities between horizontal levels come to the forefront and the results aid an understanding of the complex action arena at the local level.

While studying local level complexities in a systematic way can help with an understanding of how co-management can be applied, local level rules alone are 'insufficient to deal with commons management in a multi-level world' (Berkes 2007b, p. 3). To this point, this thesis has found that relationships and activities that define local level co-management have great influence on the nature of regional co-management for the purpose of managing tourism development. To explore this, and to identify the voice of the local, the next step in interpretation is to systematically conceptualise the characteristics of existing regional co-management to understand how local level co-management relationships and activities have been conceptualised and incorporated into regional co-management.

5.1.2 Regional Level Co-Management

The case study of the Kokoda Track used in this thesis found that tourism provides the context for co-management at the regional level. Chapter Four, Part 2 presented findings on the nature of tourism along the Track and discussed the historical context of the trekking industry and how different stakeholder groups came to be collaborating. There was also discussion exploring the nature of stakeholder relationships and how stakeholder groups historically organised to manage tourism in lieu of any legislated tourism policy for the Kokoda Track. It was found that relationships between regional stakeholders influencing management of tourism development and livelihood projects have been influenced by local level co-management of natural resources; landownership

is nested at this level. This section will provide an interpretation of the relationships and activities of regional management with the goal of understanding how collaboration among tourism stakeholders is influenced by the local level co-management practices (explored in section 5.1.1). It will also demonstrate how this has contributed to the relative success of regional tourism co-management by building on, and working within, established local level co-management.

Within regional governance, partners of co-management include customary landowners and communities, tour operators both international and local, non-government and government organisations (the KTF and the KDP) and the local management authority, the KTA. It has been noted in Chapter Four, Part 2 that partnerships between long standing international tour operators and landowning communities have effectively moulded the development of tourism on the Track. In the case of the Track, the ability of tour operators to act as intermediaries, facilitating knowledge sharing with communities, has resulted in a well-defined Track upon which thousands of tourists trek each year (Wearing & McDonald 2002). With tourism growth, the KTA was established in order to help mediate tourism development and the increasing number of tour operators and the local communities of the Track. Chapter Four, Part 2 indicates that as tourism grows, the number of stakeholder groups involved in regional management increases; non-government and government organisations working on sustainable development projects designed to support tourism are an example of this.

Stakeholders originate from both PNG and Australia and consequently cultural backgrounds differ within regional governance. In addition, conceptualisations of the Track, based potentially on differing worldviews and value systems described in Chapter Four, impact on the relationships that guide regional co-management. The issue of ‘co-management as a system of governance involving a heterogeneous (culturally and ethically) set of actors operating as a collaborative problem-solving process’ (Plummer & Armitage 2007a, p. 842) such as in this case, raises the questions of how context and culture influence the process of co-management at the regional level? Table 8 overleaf characterises these existing relationships and horizontal linkages between tourism stakeholder groups. The table also provides insight as to the influence of local

level co-management on the creation of regional management; a form of vertical linkage in co-management theory.

Table 8: Understanding Existing Co-management at the Regional Level using Berkes' Conceptualisations

Berkes' Conceptualisations of Co-Management (2008)	Evidence from the Kokoda Track case study of Existing Co-Management at the Regional Level
Co-management as power sharing	Shared decision making, effectively power sharing between the KTA and communities in relation to Track management; e.g. local community defined leaders sit on the KTA's board of directors. The KTA also use local knowledge from landowners and communities and employ them to help maintain the Track environment. The KTF has also adopted processes of working within community institutions of power sharing to determine what livelihood projects should be run in the communities
Co-management as a process	The KTA, tour operators and communities are constantly working together negotiating how tourism should be managed; e.g. the KTA walk the Track several times a year and sit down with communities to discuss development plans and issues of Track maintenance. Tour operators and communities have been working together over a long period of time, developing tourism infrastructure and businesses that change to meet tourism demands
Co-management as institutional building	The KTA is the bridging organisation that was established to help manage tourism and provide mediation between the tour operators and communities; e.g the KTA works closely with tour operators and communities in order to balance the needs of both stakeholder groups
Co-management as knowledge generation	Knowledge is shared between the KTA, tour operators and communities; e.g. the KTA sources traditional ecological knowledge from the communities to help manage and maintain the Track environment. Tour operators also generate knowledge with communities to co-produce a better tourism product. The KTF also works towards building collaboration through knowledge sharing about livelihood development options that meet the needs of the communities.
Co-management as trust and social capital	Developing trust between the KTA, tour operators and local communities has resulted in building social capital; e.g. this has resulted in solving tourism related problems collaboratively
Co-management as problem solving	The KTA act as problem solving managers to collaboratively reconcile community and tour operators needs; e.g. ensuring the Track stays open and all stakeholders are happy

Characterising relationships at the regional level using the same *faces of co-management* (Berkes 2008) applied at the local level facilitates an identification of the process of collaboration across the two scales and ensures the systematic analysis of scales within this context to better understand the process of co-management. This is something that Plummer (2009) argues is necessary for the future development of adaptive co-management models and variables. The process of crossing scales is referred to in the literature as social learning. Social learning 'aims to foster knowledge sharing and creation between stakeholders with diverse experiences and views' (Leys & Vanclay 2010, p. 574). Stakeholders within regional co-management including tour operators, particularly international operators, the KTF and the KTA have played an important role in collaboration within regional governance. Analysis of stakeholder groups and their approach to collaboration with local level stakeholders provides evidence of social learning within and between local and regional governance layers.

In the first instance, examining tour operators' approach to tourism development at the regional level suggests these stakeholders have an understanding of local level co-management. An international tour operator canvassed in this research spoke at length about how he and other Australian operators, who have been operating along the Track for decades, first started out by developing trusting relationships with landowners. He states that:

> we actually get over there and we actually sit down in their villages anyway and we talk to them…we have that face to face trust with them. (Tour Operator 1)

Paying particular attention to power sharing dynamics that guide natural resource decision making, this tour operator works within locally defined social structures and he believes this has led to the genuine relationship that exists between him and the communities he works with today. In exchange for the use of customary owned land for the purpose of trekking, this operator spoke about assistance he provides communities to establish their own businesses to generate income from tourism. The development of the trekking industry, the sharing of knowledge between landowners and tour operators and the consequential establishment of community-based businesses to support tourism presented in 4.2.2 contribute to the discussion of how co-management, as a process, exists between local communities and tourism operators at the regional level.

Conceptualising relationships between the KTF and the communities provides further evidence of the process of co-management that has ensured local level practices influence the nature of regional governance. The KTF have been working since 2003 to establish and maintain relationships within villages in order to improve the livelihoods of communities. Working through traditional local level social structures (as discussed in section 4.2.3) the KTF is generating and utilising local knowledge to direct projects toward the needs of the communities. Members of the KTF walk the Track frequently and sit in the villages to share information and develop projects that are identified by communities. This process has resulted in a focus on community-based tourism microbusiness to increase revenue from tourism for villages. KTF activities work within rather than undermine local social relationships and organisation. This approach fits in with what Cinner and Aswani (2007) believe can be the role of NGOs in the process of trying to blend customary management with more conventional practices of natural resource management; NGOs 'can play a critical role in fostering cross-scale coordination with local institutions' (p. 212). The approach towards collaboration from the KTF has contributed to trust and respect between regional stakeholders and builds connectivity between local and regional levels of governance (as discussed in 4.2.3).

Data findings and interpretation of the KTA and their role in the action arena is pivotal to horizontal co-management. The KTA works as a bridging organisation as their role involves mediating regional stakeholders. This provides an example of how horizontal co-management for the purpose of tourism management functions between and across scales. The organisational design of the KTA (which has been designed predominately by Australians in concert with PNG Nationals) demonstrates consideration of traditional styles of power sharing and institutional control of natural resource decision making that is held at the local level. For example, the KTA's board of directors consist of landowners that hold leadership positions in the communities. These leaders are engaged by the KTA to share information about the Track and the needs of the communities on a continuous basis, so the KTA can monitor progress and adapt processes and programs where necessary. Specifically, the KTA CEO states that the organisation encourages:

> the people to come through to communicate the issues that are affecting them. [This is achieved] through our (*the KTA's*) landowner consultation process to better place us in a position to have information. (KTA CEO)

The process of landowner consultation, as discussed by the KTA CEO (in 4.2.5), ensures landowners and the communities work collaboratively to share information, solve problems and follow up on issues from previous consultations with the KTA. Through iterative collaborative meetings, which are conducted several times throughout the year, KTA staff sit down with communities and design development plans that help villages direct revenue from tourism to villages (as presented in section 4.2.5). One community member commented that 'every times he (*the Chairman of the KTA*) comes up here cooperating with the community… (*he*) have good relationships with everybody' (Alola Representative 1). Another representative explains that:

> land belongs to the village people but KTA has managed it for the village people and KTA told the village people to do this and that so that KTA have to, will have to maybe, when things goes buggered then KTA will have to say this and that and the village people will work on it…that is what KTA is doing on behalf of the village people. (Efogi Representative 1)

The benefits of having a bridging organisation such as the KTA in the action arena are congruent with Leys and Vanclay's (2010, p. 576) proposition that bridging organisations can facilitate social learning through the 'creation of synergies for implementation change and ensuring values from local level knowledge and initiatives are not lost'. Hahn, Olsson, Folke and Johansson (2006) argue this approach of continued consultation is needed from bridging organisations working in dynamic complex systems.

> Successful management is characterized by continuous testing, monitoring, and adaptive responses acknowledging the inherent uncertainty in complex systems. (Hahn et al. 2006, p. 574)

A commitment from the KTA towards landowners and the role they play in regional management can be identified from the data analysis. While the KTA acknowledge dynamism is inherent within local level social organisation, the iterative process of consultation and knowledge generation demonstrates the flexibility in organisational design and commitment to continual cyclical processes. Flexibility in organisational design is considered essential in adaptive co-management (Hahn et al. 2006),

particularly in bridging organisations such as the KTA who coordinate a variety of regional stakeholders.

The KTA appear to acknowledge other regionally based players who have a role in generating revenue for tourism and encourage open collaboration with communities. Within this action arena, regional stakeholders are reliant on the same natural resources of the Track. The KTA facilitate information sharing between regional and local stakeholders through stakeholder forums held twice annually and distribute newsletters. The bridging organisation is an arena generating, mobilising and communicating knowledge; a centre for conflict resolution and a place where assistance is provided to a number of different stakeholders (Hahn et al. 2006). These opportunities created by the KTA provide space for group based knowledge generation at the horizontal level and also social learning vertically across scales (local, regional and national in some cases). The KTA itself has gone through a change in organisational design specifically to be able to deal with this flexibility:

> they're (*the KTA*) having to change their whole, literally change their organisation from being a government department to statutory authority just so they can do these things and it's taken years and unbelievable amounts of money to try and get to a process where they can change as an organisation to do this. (KTA Chief Advisor)

The changes to the KTA as a bridging organisation and the ability for this organisation to change their perception in the community (as discussed in 4.2.5) and strengthen relationships can be likened to multi-levelled governance strategies reported on in a Marine Protected Area (MPA) in Vietnam.

> At the outset of the MPA establishment, the people thought that this MPA is established to prevent fishing activities and creates obstacles related to economic incomes for local communities (C7). "They were angry when they saw the MPA authority's boats parking at the village because they hate the enforcement team, who confiscated their boats or others because of their illegal exploitation. But no more conflict now. They are very happy and open-hearted when meeting MPA staff" (C5)…The MPA [authority] just helps local communities and tries to use local resources to assist local communities. It differs from other development projects that generated big problems, in terms of resettlement and livelihoods, for local communities. (L21) (Ho, Cottrell, Valentine & Woodley 2012, p. 25)

While the process of change has been difficult (KTA Chief Advisor), the perceived benefits of a bridging organisation such as the KTA, as an example for PNG generally, may mean that dealing with change and dynamism will be easier (KTA Chief Advisor). It may potentially also ensure collaboration across scales is also improved.

The process of information gathering and knowledge sharing used by the KTA creates a strong link between local and regional stakeholders that can be conceptualised as group-based social learning within the theory of co-management. Group-based social learning within a bridging organisation is considered to be one of the evolutionary links between co-management and adaptive management (Armitage, Berkes & Doubleday 2007a) and what scholars argue is a better approach to apply to managing natural resources (Armitage, Marschke & Plummer 2008; Berkes 2008; Keen & Mahanty 2006). While the approach is neither centralisation nor decentralisation, the priority is 'supporting flexible institutions and multi-level governance systems' (Hahn et al. 2006, p. 574). Similar to the case presented by Hahn and colleagues (2006), where property rights set the framework for collaboration, the KTA's commitment to the property rights of the customary landowners ensures the processes of regional co-management acknowledge and engender empowerment of local level stakeholders (as discussed in 4.2.5).

The commitment from the KTA to the landowners represents an understanding of the need to protect the Track and the values it engenders for communities. Importantly, while the KTA was established to manage tourism and mediate tourism development between stakeholders, this thesis found that part of their role is ensuring the values of both local and regional stakeholders can be met through the advent of tourism. Local level stakeholders needs, such as economic development and livelihood diversification, are a priority for the KTA. In addition, values such as military tourism and the importance of the natural resources for tourism are values nested regionally that also need protection.

At the regional level, traditional local level social structures are nested within the establishment of what appears to be predominately a Western notion of management (the board of directors and organisational hierarchy that supports it). Co-management of tourism is designed around iterative collaborative feedbacks with local and regionally

based stakeholders in order to continually evolve and adapt processes and practices to meet the needs of both stakeholder levels. Social learning as a continual process in this case resonates where different actors deliberate and negotiate rules, norms and power relations based on existing social structures that guide natural resource management; 'learning is premised on shared norms that enable parties to interpret their experience in similar ways and to behave according to agreed upon standards' (Nkhata & Breen 2010, pp. 410-1). The use of social learning as a conceptualisation of co-management in this case is an appropriate way to explore cross scales interactions between local and regional Track stakeholders and begin to explore the relationships influencing governance of natural resources. These interpretations help explore the critical question from Plummer and Armitage (2007c) in suggesting how in the context of the Track, horizontal and linkages are bridged across scales and this process may be considered adaptive co-management.

5.1.3 National Level Co-Management

At the national level, the PNG and the Australian National Governments are considered partners in co-management, however, evidence presented in Chapter Four, Part 3 indicates international influences play a part in the direction of national management and protection for the natural and cultural resources of the Kokoda Track. An analysis of horizontal linkages between the two national stakeholders indicates sustainability and protection of the Track is a key focus of national co-management. In order to contribute to these goals, the Kokoda Initiative (KI) has been established as the institution to guide projects run by the DEC and DEWSPaC. Co-management will be explored in this section to provide an understanding of the nature of collaboration at the national level.

Table 9 characterises national level stakeholder relationships by using the same conceptualisations adopted at both local and regional levels. National level co-management is well defined and articulated within policy documents and data from a focus group completed in this study. Horizontal co-management explored in the following table outlines how the activities of national stakeholders sit within the six conceptualisations of co-management. However, interpretation of the nature of collaborative processes nationally results in findings that suggest national co-management has been influenced little by local and regional based activities of co-

management. Following the table, the analysis of the KI and the stakeholders that associate and operate within this institutional arrangement are juxtaposed with local and regional co-management. This discussion facilitates the identification of key issues that currently prevent vertical linkages between local, regional and national levels of governance.

Table 9: Understanding Existing Co-management at the National Level using Berkes' Conceptualisations

Berkes' Conceptualisations of Co-management (2008)	Evidence from the Kokoda Track case study of Existing Co-Management at the National Level
Co-management as power sharing	Power sharing between the two governments is understood through shared decision making; e.g. the allocation of roles and responsibilities between the DEC and DSEWPaC running the Kokoda Initiative
Co-management as a process	The evolution of the Kokoda Initiative and the projects associated with this government partnership demonstrate the evolutionary process of managing this dynamic region. Recognition that development of new policies and procedures guiding protected areas and WHA development are processes that require time and collaboration; e.g. the Kokoda Initiative is a constantly evolving process that has changed throughout the two joint understandings
Co-management as institutional building	An institution was established to manage the relationship between two national partners in co-management and the associated government agencies involved; e.g. the Kokoda Initiative has been established to manage the partnership between the two lead government agencies and other agencies involved
Co-management as knowledge generation	Between the two lead government agencies, knowledge generation and knowledge sharing occurs; e.g. through capacity building programs in different agencies, DEC and DSEWPaC government employees generate and share knowledge to help better manage national projects
Co-management as trust and social capital	Trust building has resulted in the development of social capital between the two lead departments of the Kokoda Initiative; e.g collaboration at the national level has resulted in the signing of the second joint understanding between the nations and the partnerships between the PNG local employees and their Australian colleagues
Co-management as problem solving	Drawing on knowledge from both the PNG and Australian counterparts, national level management is working on problem solving; e.g. the identification of the need for a new protected area policy framework in PNG and finding new solutions to governing World Heritage on customary land

The context of national level co-management is the establishment of a sustainable management and protection plan for the Track as defined by the KI (discussed in 4.3.1). While the scope of local and regional level co-management differs from this (local co-management focuses on community livelihoods and natural resources for subsistence use and regional co-management focuses tourism and natural resources supporting tourism), the common thread between the three levels is the protection and preservation of the natural and cultural resources of the Track. At the national level, this context is the driving force behind the partnership between the DEC and DSWEPaC and the establishment of the KI.

While evidence (public documents and focus group empirical findings) shows that direct links between national and local level stakeholders is a priority for the KI, there is no explicit direct relationship or activities that link these two levels. The establishment of an organisation for co-management is said to assist in the emergence of functioning collaborative relationships (Berkes 2008); the bridging organisation, as the KI could be conceived as, could provide the much needed link between different scales of stakeholders. This style of bridging organisation is often charged with providing a favourable policy environment necessary for two way feedback between government and local stakeholders (Armitage et al 2007a). However, while national management KI forums and networks are designed to encourage collaborative management between local, regional and national stakeholders, the process of national management engagement with local level stakeholders can only be seen through regionally based stakeholders (the KTA and the KDP as delivery partners of the KI). The lack of a direct link particularly between the national PNG Government and local level stakeholders was a common theme raised by community representatives. Community representatives specifically identified corruption in the government and the lack of support given to rural communities by the national government (Sogeri Representative). With feelings of mistrust (as explored in the discussion on community perceptions of corruption in the government in section 4.3.4), the ability for the KI to function as a bridging organisation, and create a suitable policy environment that encourages participation may be challenging. While ‘participatory approaches’ were advocated by national stakeholders in this study as a method of working with and involving customary landowners, specifically in relation to the work of the KI and consequently the

development of a WHA, no information from the national level could be provided on the process of implementing such approaches. As yet, the well-defined link between national and local stakeholders that co-management scholars firmly advocate (Pomeroy & Berkes 1997) does not exist (as discussed in 4.3.4).

The analysis presented in Table 9 also helps identify that the nature of relationships between national partners differs from that at local and regional level. National level stakeholders are predominately government employees, from either DEC or DSWEPaC, who have purposefully partnered in pursuit of the same overall outcome, a sustainable Kokoda Track as per the bilateral agreement between PNG and Australia (Papua New Guinea Government & Australian Government 2010). This is unlike collaboration at the regional level where tourism stakeholders and NGOs have begun operating independently and are motivated by different outcomes. National partners are effectively working towards the same pre-defined goals that were created collaboratively during the establishment of the KI. With that, national level management has developed formalised and accepted goals by both parties and evaluation measurements (for example the joint understanding, the KI goals and annual reports) to ensure activities and tasks are met in order to work towards sustainable management of the natural and cultural resources of the Track.

These features of national level co-management vary again, quite significantly, from the nature of local level co-management. Traditional social structures that guide relationships and activities between local level stakeholders have been in existence for centuries if not longer between the Koiari and Orokaiva cultures. National level co-management, as it is understood in this case study, is a relatively new co-management partnership that was established in the last five years since the signing of the joint understanding and the consequential establishment of the KI. Characteristics of local level co-management are dictated by custom and tradition and are well defined within local level partners. This is vastly different from newly formed national management co-management, where power-sharing is defined at inception and characteristics of collaboration are created for a specific purpose. Understanding these fundamental differences in the nature of co-management at national and local levels shines a light on

some of the challenges in *crossing scales* (Plummer & Armitage 2007a) between these stakeholders.

Where social learning between local and regional stakeholders can be seen to have influenced the development of a dynamic, adaptable and polycentric form of regional co-management, there is little to suggest collaborative learning processes have occurred between local and regional stakeholders and national level management. Through the exploration of relationships and the conceptualisations of co-management, it can be seen that regional level stakeholders understand the important role of local level stakeholders and their processes; it is the same resource that is being valued at both levels. Based on an analysis using the *faces of co-management*, there appears to be little evidence from the national level of a solid understanding and appreciation of the intricacies of local and regional co-management that have and continue to guide relationships that manage tourism and the natural and cultural resources of the Track. Therefore, it may be that while existing co-management arrangements at the local and regional levels go unexplored and remain unlinked to national level processes, and national co-management continues in isolation to develop new participatory approaches to protected area and WHA management, there is likely to be little process working towards bridging these scales.

The protected area management literature argues that national and international stakeholders are often the driving force for protecting biodiversity; some argue that it is the sole role of the government, which commits to international biodiversity treaties, to design and implement conservation strategies (Edroma 2004). However, as the literature and data synthesised in this thesis suggests (see section 4.3.2), traditional state-based management is insufficient to manage biodiversity conservation in isolation. With the potential socio-political issues of corruption alluded to in this research, compounded with failed policy (Department of Environment and Conservation 2011), national level management appears to be struggling to design and implement protected area management approaches that encourage participation and gain support from civil society. In some cases around the world, 'local actors have managed to 'navigate' among national and international institutions and organizations for legal, political and financial support' (Hahn et al. 2006, p. 575) and ensure the voice of the local is heard in

policy development. However, it would appear to date, this has not occurred in the case for the local voices of the Track.

The next and final process in exploring co-management in the case of the Track (based on the framework in Figure 3) is to broaden the understanding of how adaptive co-management can be viewed as a potential approach to governance based on the existing power dynamics of the Track case study.

5.1.4 Understanding Adaptive Co-Management as Governance for the Kokoda Track

The Kokoda Track case study has been used to demonstrate relationships that guide natural resource management within a complex social-ecological arena. Figure 3 represents the framework used in this thesis for exploring relationships within local, regional and national co-management that guide governance agendas managing the Track. The process of analysing horizontal co-management (sections 5.1.1-5.1.3) resulted in the understanding that while the context for collaboration at each horizontal level is different, values and relationships intersect with one another in relation to the same natural resource - the Track. This final section discusses how the horizontal and vertical linkages in this complex social-ecological arena (a process that can be conceptualised as adaptive co-management) can contribute to an approach to World Heritage listing for the Kokoda Track. Here the important role of customary landownership, multiple scales of management and the need for a strong bridging organisation to facilitate multi-level governance can be considered and integrated into future management plans.

In Chapter Two it was maintained that governance is viewed as a social process used to guide society, management and to implement the actions that are outlined in the governance strategy (Nkhata & Breen 2010). From this understanding, coupled with the interpretation of data in this chapter, it can be claimed that adaptive co-management is a process of governance. This is symbiotic with Plummer and Fennell's (2009) work in their conceptual paper on co-management theory. Stakeholder collaboration horizontally represents governance as it exists at the local, regional and national level. The process of social learning, where the different faces or conceptualisations of co-

management cross scales, is a way of bridging local and regional levels in this case. Social learning in this action arena provides a way 'to form cross-scale and multi-level linkages to other industries and interest groups with various levels of governance for influence in policy development and change' (Leys & Vanclay 2010, p. 582). The outcome is a potential tool for understanding relationships across and between scales and the identification that currently dynamic, adaptive and collaborative approaches already exist that could be considered in the creation of a management strategy for the Kokoda Track WHA (based on analysis from Tables 7-9).

Berkes (2008) maintains that by understanding existing social organisation of stakeholders within well-defined local co-management arrangements, and identifying how social learning contributes to the bridging of scales between local and regional levels, a polycentric governance strategy will begin to emerge. Where dynamic and iterative processes exist at the regional level, strong linkages between local and regional stakeholders can be identified, which was found to be the case this thesis. The linkages have contributed to the development and management of tourism and the consequential improvement of community livelihoods on the Track. The existing linkages may be used by national level stakeholders to help understand the complex social-ecological arena and potentially leverage off these linkages in developing a WHA management plan for the Kokoda Track (this will be explored further in the next section).

However, there is a need to more closely understand how social learning may influence knowledge or the co-production of knowledge, particularly traditional knowledge of natural resource management, between local and regional scales in this case. Armitage, Berkes, Dale, Kocho-Schellenberg and Patton (2011) argue that to understand how knowledge is co-produced across scales it is important to bring local and traditional knowledge together with scientific knowledge for natural resource management. The issue of crossing scales and forming linkages with customary landowners of the Track and the co-production of knowledge on natural resource management processes is important as the legislative policy environment of the Track is currently defined by customary landownership. Therefore the need to understand local or traditional natural resource management strategies for the purpose of developing a protected area policy may need to consider how to incorporate existing local and traditional knowledge.

Customary landownership legislation is a central feature of local and regional governance and therefore may be able to contribute significantly to the establishment of a national level World Heritage governance strategy for the Track. Unlike some of Queensland's WHAs, creating space for local level stakeholders and their approaches to governance is a process of retrofitting and essentially remodelling governance (Hill et al. 2011; Nursey-Bray & Rist 2008). In a different case in Queensland, well-established legislated World Heritage frameworks create a barrier to inclusion of local level stakeholders in what they consider to be *caring for country*:

> A lot of our countries are tied up by National Parks and there's a lot of procedures that we've got to go through. We can't just go on country now. We've got to get a permit and they can't refuse the permit unless there's something drastically that we do wrong and we do have to have a permit now for hunting, hunting/gathering and just camping. It gives you that limitation where you're limited to what you can do so caring for country to us important but then as I said it's something that's got a lot of strings attached and a lot of limitations. – Traditional Owner participant (003) (Zurba 2010, p. 56)

Statutory frameworks have resulted in barriers for traditional owners in this Australian national park to restricting access to the land to which they hold significant value (Zurba 2010). In this thesis, the research has demonstrated that no protected area or World Heritage legislative framework exists in PNG to limit the role of existing local and regional level governance. This research found that local and regional linkages are tied closely to customary landownership and there is an opportunity to apply these findings and explore whether these linkages from the tourism industry can be transferred to a natural resource management structure for the purpose of exploring the natural resources and their values in this potential WHA. This will be important regarding the creation of space, politically and legislatively, for existing local and regional governance processes in the development of an appropriate WHA management framework for the Track.

The research in this thesis suggests local level co-management exists through traditional social structures and processes that are based on customary landownership norms. While the process of exploring and incorporating the community social structures that centre on traditional ownership into political processes of conservation is likely to be

lengthy and costly, one could argue 'that the projected efficiency should be sacrificed if an alternative communal ownership is better suited to minimize social and environmental problems' (Lea 1993, p. 96) in the future.

> Customary tenure has the potential to be an important basis for sound and appropriate systems of resource management but (original emphasis) this needs to be more explicitly dealt with in national policy and perhaps provision made to safeguard against some of the weaknesses emerging under modern pressures. (emphasis in original, Govan 2009, p. 30)

Further,

> the idea that land can be easily and quickly registered and that this will facilitate an immediate and successful engagement with the global marker, while fondly embraced by economists and bankers alike, is not supported by historical or anthropological evidence to date. (Foale & Manele 2004, p. 381)

These ideas juxtaposed with analysis in this thesis may assist in demonstrating that local and regional adaptive co-management as it has emerged in this research may be used as a natural resource management strategy protecting the Track. The scales at which resources are used, for example the village scale at the local level in this case, can be important in the design of conservation strategies. Potentially a lack of understanding of these complex scales by the national level is fuelling the proposal to introduce a natural resource management strategy through policy development that relegates customary landowners to managers through the new drafted protected area policy under the Conservation Act 1978. Cinner and Aswani (2007) state that spatial scales of ownership, usage and governance are key to integrating customary practices into natural resource management processes and the multiple scales identified and explored in this research provide a way forward to creating a more decentralised approach to managing the Kokoda Track resources.

Stakeholders at the national level indicated that no formal governance strategy for the Track exists, and this is the cause of some of the issues surrounding the progression of a WHA nomination. DEC representatives alluded to the need for developing a new approach to managing the Track in a way that includes all stakeholders (as presented in 4.3.4). This research, which focuses on dynamic traditional land management practices of the customary landowners and understanding the ways in which other industries

(tourism in this case) have incorporated and translated these into new management processes, may provide insights for policy makers to consider incorporating adaptive and flexible approaches that exist within customary landownership into protected area policy development for the Kokoda Track.

The notion of developing adaptive co-management arrangements in a context specific way that is based on pre-existing social and cultural constructs is likely to have more success than an arrangement that introduces different ways of management (Plummer & FitzGibbon 2007). Therefore, when existing levels of co-management are conceptualised using similar lenses, the ability to characterise social and cultural constructs that influence relationships between different stakeholder groups becomes easier. For example, it has been critical to understand how power is shared between customary landowners through relationships guided by custom (see Table 7) in order to make comparison with power sharing between KI national partners and the organisation of roles and responsibilities based on capacity and development needs within the DEC policy framework (see Table 9). These types of comparisons elicit an understanding of the complexities of establishing multi-level power sharing structures when the values of stakeholders differ greatly in one complex social-ecological arena. Dealing with multiple levels of power sharing techniques in one complex arena may require more focused-attention on the bridging organisation ensuring that differing values can be heard in decision making processes across scales of management.

Accepted forms of power sharing exist at each level in this case through either traditional customs based on ancestral lineage or the building of institutions to share responsibility of regional and national management. This information is important and could be influential in the process of building adaptive co-management governance strategies that is enabling of multiple spatial scales of management that are equitable and more widely accepted by different stakeholders. The ability to incorporate existing management from each level (community livelihoods, tourism and protected area policy formulation and governance) and work toward creating a World Heritage framework that incorporates multiple priorities also sheds light on the question of how adaptive co-management can take a broad ecosystem approach (Plummer & Armitage 2007c).'Understanding the complex social processes, such as the historical,

socioeconomic, governance, political and environment conditions within which the social-ecological systems are embedded is critical to translating customary governance into hybrid management' (Cinner & Aswani 2007, p. 212) that could be used to manage the potential Kokoda Track WHA. The ability to understand the organisation of stakeholders at multiple scales to solve problems, share knowledge and build trust and social capital is fundamental when considering how to *manage relationships* that manage natural resources.

5.2 Outcome and Implications of the Case Study: The Role of Tourism

This thesis has examined the use of adaptive co-management and its application in the case of the Kokoda Track. It has also explored issues that might be considered in the pursuit of sustainability and protection for this social ecological arena as a potential WHA. Based on the systematic analysis of adaptive co-management at the local, regional and national levels, the results suggests that both horizontal and vertical linkages exist. Although not all linkages between stakeholders exist or are functioning well, a key outcome of this research is that tourism in this context provides a space for adaptive co-management principles to be applied. This section will present challenges and possible solutions to working within the scope of tourism as it currently exists as a critical link in this action arena.

Many participants explained that the Track needs protection as it functions as an economic livelihood source at the local and regional levels. This value position is an important consideration for national management in the creation of protected area status for the region. Bushell (2005) identifies that building support for protected areas can be achieved through tourism, as an economic livelihood source, specifically for communities. Tourism in this case has significant economic benefits for local level stakeholders and there is opportunity for tourism revenue to be steered toward conservation programs. High yield nature-based tourism, as is the case of the Track, is ideal to supporting sustainable use of natural and cultural heritage (Bushell 2005). If regulations are introduced that ensure a larger portion of funds stay in PNG and in the villages, tourism revenue has the potential to be used towards promoting conservation of the Track. Bushell (2005, p. 153) argues that 'there is a need for attitude change to

see the opportunity of tourism as a tool for conservation, rather than viewing parks as a business opportunity and resource for tourism'. Tourism could therefore play a potential role in moving towards a more integrated set of values to be used in the establishment of a protected area strategy, such as the potential WHA in this case.

Operationalising adaptive co-management as a research tool allowed for the exploration of the stakeholders' values and knowledge. Literature on adaptive co-management suggests the need to integrate stakeholder values in order to better manage social-ecological systems (Armitage, Berkes & Doubleday 2007a). In this case, tourism has emerged as an avenue to interpret stakeholder values of a social-ecological system and begin the process of understanding and integrating new ways of creating space for participation of local level stakeholders in the establishment of a WHA. While the link between tourism and World Heritage has received much attention (Leask & Fyall 2006; Nicholas 2007), and some argue this link is inextricable (Fyall & Rakic 2006), this research has demonstrated that local and regional co-management that combines to manage trekking on the Track influences uses of natural resources used for the tourism industry. There is potential for the interaction between tourism stakeholders and the natural resources to be integrated into the process of understanding more closely natural resource use in the region for the purpose of protecting the region.

Tourism has the potential to be a pivotal tool in the formalisation of a natural resource governance strategy. For example, in Mexico, local level stakeholders who organised to manage whale shark ecotourism with tour operators were identified as potential partners, along with other key stakeholders, to begin discussion on conservation priorities for the region (Cardenas-Torres, Enriquez-Andrade & Rodriguez-Dowdell 2007). As a result, the tourism system provided the context for exploring how property rights and decentralised marine resource management interact (Rodriguez-Dowdell, Enriquez-Andrade & Cardenas-Torres 2007). Similarly, this thesis found that stakeholders in the Kokoda Track action arena, who organise themselves to manage the tourism industry, may too provide a context for discussions of conservation needs and priorities. Plummer and Fennell (2009) argue that the theory of adaptive co-management can provide a way to understand the tourism system as it interacts with the protected area. The research in this thesis has suggested that tourism, as a system which

can be explored using adaptive co-management, can provide insights into stakeholders' relationships with the resource under focus which could be used as a foundation for exploring a new approach to protected area management.

The importance of tourism in this research context cannot be over-estimated. There may be opportunity for national level stakeholders to foster existing horizontal and vertical linkages between local and regional stakeholders in order to further the progress towards WHA listing. While national co-management programs support the tourism industry through positioning of staff at the KTA and support of technical and financial assistance through the KI and the KDP, there is an opportunity to better understand and value relationships that manage tourism daily on the Track. The long standing tour operators and the KTF are both valuable sources of knowledge in the intricate process of successful relationship building with communities. Using these stakeholders as knowledge sources that cross and bridge multiple scales, national management may be in a better position to continue building positive relationships and understanding the multiple values of communities that are likely to be involved in the potential WHA.

Tourism plays an important role in creating a space for the voice of the local to be heard. It was found that communities have a significant voice in regional management (of tourism particularly) through customary landownership, as a community-based legal system, which is used as the basis for relationship building. In Fiji, Scheyvens and Russell (2012, p. 20) state that within tourism development in Fiji, community-based property rights, similar to customary landownership in this case, allows 'Fijians to engage in tourism and gain social and economic benefits'. Customary landownership as an integral component of local level co-management gives voice regionally, where locals can often go unheard, to those most affected by tourism management decisions for the Track (as presented in 5.1.2). Pinkerton et al. (2008) agree that in the changing neoliberal approach to environmental management, it is property and resource rights that can play a significant role in creating space in the political sphere for the voice of the local; the theory of adaptive co-management is one way for property and resource rights to be explored and tourism may then be used as a tool for leveraging off existing relationships. Customary landownership as it is exercised through tourism can empower landowners and communities to play a pivotal role in the self determination of their

future and mostly ensures a decision making role in governance at the regional level in the case of the Kokoda Track. While tourism has been helpful in understanding how local level stakeholders and their values interact with regional level stakeholders, it is unknown at this stage how this information may create space for the local in national level priorities such as the nomination of the Kokoda Track as a WHA.

5.3 Implications for Theory and Practice

This thesis sought to examine the decentralisation of natural resource management by focusing on a potential WHA, the Kokoda Track. In doing so, this research has contributed to the body of knowledge by applying co-management theory, as a potential solution to the problem of decentralising CPR management, with the practice of adaptive co-management and as a result has developed a framework for operationalising the exploration of complexities in a multi-levelled social-ecological arena. This thesis has highlighted the importance of considering issues of property rights and landownership in adaptive co-management approach to governance for the protection of social-ecological arenas. This section will now highlight the implications of this research for the theory and practice of co-management based on the interpretation of its application in the case of the Track.

Customary landownership as a feature of legislation in Pacific Island nations provides a unique context for dialogue on protected areas and WHA establishment, where customary landowners' decision making authority becomes the centre of discussion. Govan and Jupiter (2013) highlight that without relying on local management, in the form of customary land or marine tenure, efforts to meet international biodiversity targets will not be achieved. Future case studies may need to consider the challenges in identifying and understanding how decision making at the local level occurs. This thesis has demonstrated, through the analysis of stakeholder values and relationships that customary landownership on the Kokoda Track currently features as an important element of tourism management. Tourism has provided an opportunity to explore customary landownership and begin to understand how these property rights influence decision making and may potentially impact on dialogue of protecting the Kokoda Track.

The intricacies of working within the scope of customary landownership has also been revealed through the use of Berkes' *faces of co-management*. This framework has allowed complexities of multi-scaled governance systems to be understood and the voice of the local in this case to be traced. An opportunity to explore the complex nature of customary landownership may provide a tool for future researchers to understand multiple scales within a governance system and identify if and how local level stakeholders may have a voice in the management of other sites. It is the voice of local level stakeholders and the how this voice is heard that may contribute to a broader understanding of the importance of customary landownership in establishing the Kokoda Track as a WHA.

This research suggests that in the wider context of natural resource management, where there is a need for innovative approaches to understanding partnerships with various stakeholders, co-management can be used as a process for exploring existing social organisation of multi-levelled stakeholder groups. The results of this thesis contributes to theoretical debates that question whether co-management should be considered a process or an end result in environmental management of social-ecological systems (Carlsson & Berkes 2005). Hence, a key contribution of this thesis is the ability to operationalise Carlsson and Berkes' (2005) first step in their methodology of co-management theory. By using co-management as an approach, a process that is pluralistic and not simply the classification of the end result, the outcome is a systematic analysis of the complex social action arena. Through this the different value systems of stakeholders can be given a voice and then be presented and integrated into the mechanisms of management going forward.

This thesis demonstrates that by considering Berkes' conceptualisations of co-management, a structured framework (Figure 3) may be developed for exploring and evaluating the stakeholders that partner in managing multi-levelled social-ecological systems such as the one in this case. This framework has allowed for contextual complexities at the local, regional and national levels and for the stakeholder interactions within and between these levels to be explored. As Ho, Cottrell, Valentine and Woodley (2012) suggest, multi-levelled governance can be difficult to achieve and perceived barriers to effective ways forward can be hampered when the social

interactions and contextual elements of a region are not explored at the outset of protected area establishment. The approach in this thesis provides a means to move forward with strengthening old linkages and creating new linkages across the three scales of management which may contribute towards formalising a governance approach that is adaptable and more socially accepted by stakeholders of the Track.

As this research is contextualised within the international conservation paradigm, this thesis also contributes more broadly to the discourse on CPRs. In Chapters One and Two the author introduced the notion of CPRs, establishing that on the basis of their global significance, WHAs may be characterised as global CPRs. Existing academic literature, which has considered commons theory as it is applied to World Heritage has drawn attention to changing past histories of relocation and disenfranchisement towards the need to place local stakeholders at the centre of environmental management planning. In spite of this, policy level deliberations continue to remain centralised in the upper echelons of national government agencies and at international conventions (Edroma 2004; Sullivan 2004). While this leaves little space for consideration of the views of local residents and resource users there has recently been a shift in policy level discourses specifically in the Pacific. Protected area policy discourse is now calling for more adaptable and flexible policies in managing natural resources that is advocated by local level custom and culture (Bartlett et al. 2010). This process can assist in ensuring that not only the local voice is heard in policy planning for future protected area and World Heritage establishment in the Pacific but that there is a better understanding of the valuing of these stakeholders. The results presented in this thesis contribute to academic scholarship in favour of increased engagement with local stakeholders in the creation and management of conservation policy primarily through the building of a framework around co-management theory.

Unlike other approaches discussed on the international stage where local stakeholders are brought on board progressively in the course of the development of conservation projects (Kaldun 2003), this research suggests that policy architects instead pay more attention to existing informal and formal processes of social organisation and land management at the local and regional levels. By understanding the contextual complexities of existing stakeholder partnerships, and recognising the historical and

political backdrop of management in social-ecological arenas, the foundation exists for formalising adaptive co-management in CPRs. As local level stakeholders become more a part of the way in which World Heritage is driven, and customary law is now recognised within the implementation of World Heritage (Lemelin & Bennett 2010), underlying theoretical principles need to enact a change in the practice of conserving natural and cultural resources. This means understanding and placing value on local cultural perceptions of nature rather than the universally accepted Eurocentric constructions of it. Therefore, embedding existing interactions, processes and partnerships working effectively in social-ecological arenas into protected area development is more likely to result in socially accepted policies where local level stakeholders can actively participate and make decisions.

The central premise behind the new approach to adaptive co-management presented in this thesis is the supposition that pre-existing stakeholder partnerships, that govern economic and environmental management processes, should be considered in the creation of multi-levelled governance within protected area policy. The author recognises that while not all stakeholder partnerships are effective and free from conflict, the historical and political contexts influencing relationships play an important indicator in the likely success of adaptive co-management as a governance approach. Therefore, understanding how the complexities of working with local level partners have been woven into the fabric of emerging industries holds promise for designing new partnerships for the purpose of conservation.

5.4 Addressing the Research Questions

As discussed in this thesis, the application of World Heritage remains in its infancy in the Pacific region and specifically in PNG. To date, despite the designation of Kuk WHA in PNG in 2008 (Denham 2012), there is no effective World Heritage governance strategy and management plan to balance the needs of the customary landowners and biodiversity conservation for the long term. However, as the international pressures of the Convention mount, Pacific Island nations, such as PNG, feel the push to inscribe WHAs. This thesis has used the case of the Kokoda Track, as a potential WHA, to demonstrate an approach to exploring multi-levelled stakeholder values within a complex social-ecological arena which may be used to work towards devising

appropriate governance strategies that work towards utilising existing customary management practices as a legitimate form of management that meets the standards of international conservation treaties.

The three research questions that guided this thesis were:

- How can co-management be used to investigate the collaboration of stakeholders in the listing of a World Heritage Site?
- How does co-management enable local communities to become engaged in the listing of a World Heritage Site such as the Kokoda Track?
- What is the influence and impact of traditional landownership practices on the listing process for a World Heritage Site?

Firstly, this thesis raised the question of how co-management theory can be used to investigate the collaboration of stakeholders in the listing process of a WHA; in this case, the Kokoda Track and Owen Stanely Ranges Tentative WHA. Analysis and interpretation of case study findings along with the application of co-management theory allowed a context specific framework to be devised to explore existing collaboration on the Kokoda Track (Figure 3). The result of this exploration concluded that three different spatial scales of co-management currently exist. These included local, regional and national level co-management, which were explored by characterising relationships and interactions of stakeholder collaboration using Berkes' (2008) conceptualisations or *faces of co-management*. This resulted in an understanding of how horizontal and vertical linkages connect stakeholders for the purpose of management of the Kokoda Track. In this process, it became clear that traditional processes and practices within customary landownership, as a fundamental part of local and regional level co-management, manage the relationships that guide existing natural resource management of the Kokoda Track.

Understanding customary landownership on the Kokoda Track, as constitutional legislation in PNG and in the context of tourism development, provides insight to the second research question. In this case, co-management has enabled local level stakeholders, with customary landownership rights, to become engaged and pivotal in the process of tourism. Local communities' values have contributed to the nature and

design of tourism and consequently local level stakeholders remain influential and engaged in the management of the industry. Co-management, as it is applied in this study, provides a new way of conceptualising the ways stakeholder values relate. The interactions of stakeholders at the local and regional levels have enabled a decentralised approach to tourism on the Track, where customary management is blended with conventional management. Customary landownership empowers locals with the right to self-representation and self-determination in the decision making for tourism. This decentralised approach may be an opportunity for enabling local communities of the Kokoda Track to be more engaged in the ongoing listing process of the WHA.

The final research question to be addressed was: what has been the influence and impact of traditional landownership practices on managing the Kokoda Track for development of a World Heritage Area? The answer to this question is twofold. This thesis concludes that traditional customary landownership has influenced and continues to impact the management of the Kokoda Track at a local and regional level. Customary landownership plays a fundamental part in the way in which nature and culture are linked and as a result, impacts on the organisation and management of community life. In terms of regional co-management, customary landownership represents the socio-political environment within which tourism operates. Thus it is pivotal to the development and success of the tourism industry and the process of continued benefit sharing and mediation between the needs of Kokoda Track communities and the trekking industry.

On the other hand, in terms of managing for the development of a WHA for the Kokoda Track, traditional landownership practices have caused progression with nomination to stagnate since the initial listing on the Tentative World Heritage List. Based on data analysis and interpretation of national level management and priorities, legislation affording the continuation of customary landownership has been identified as one of the biggest challenges influencing protected area policy reform (Department of Environment and Conservation 2011) and consequentially a national strategy for World Heritage in PNG (*non local* DEC Representative 4). Despite a series of debates and discussions in the field and in academia advocating the importance of continuing and strengthening customary landownership in PNG (Fingleton 2004; Lea 1993; Weiner &

Glaskin 2007), the current thinking of national level management is to remove ownership rights and relegate customary owners of the land to managers of a protected area and potential WHA.

The influence of such types of community-based legal systems are now starting to be addressed in countries like the Solomon Islands, Vanuatu and Fiji, in order to better understand the nature of customary landownership and how it interacts with the World Heritage Convention's understanding of site management. These are important questions that need consideration before it is too late for the communities of the Track. The socio-political context in which these practices exist is a product of history that continues to evolve and therefore the intricacies of traditional landownership and management practices in PNG and specifically on the Track are unique. Thus, an integral part of managing CPRs in PNG is understanding the complex and dynamic nature of these community-based legal systems and those who are so intricately woven into them.

5.5 Suggestions for Further Research

Research into protected areas continues to grow as the international community continues to negotiate how biodiversity conservation can be achieved through a more decentralised approach to natural resource management (Moorman, Peterson, Moore & Donoso 2013; Zurba 2009). In this thesis co-management, as a potential avenue to decentralisation of natural resource management, was used to explore collaboration in the case study of the Kokoda Track. A framework to explore stakeholder values and relationships was designed (see Figure 3) based on Berkes' conceptualisations of co-management. This was tested in PNG and lessons learned suggest this potential WHA already has a multi-levelled governance system that is closely connected to a decentralised approach to tourism that could be used as a basis for exploring a decentralised natural resource strategy. Based on this, this thesis has raised new areas of interest for future research. They include: (1) the use of participatory action research to operationalize the next step of Carlsson and Berkes' model of co-management where future management tasks can be explored in this case, (2) the application of the adaptive co-management governance framework or a modified approach to the one used in this thesis in different pre-WHA contexts around the Pacific, and (3) the need for continual

anthropological and sociological understanding of the changing relationship between nature and culture in communities, especially as issues of rights in decentralised natural resource management continue to be raised. The following discussion will elaborate on these three areas.

First, this thesis has demonstrated the complex social-ecological arena of the Kokoda Track, and the multi-levelled system of governance that currently exists and in doing so has operationalised Carlsson and Berkes' first step in their six step scheme of co-management. The next step is to 'map essential management tasks to be performed and the problems to be solved' (Carlsson & Berkes 2005, p. 73). Based on the findings of this thesis and using the linkages identified in this research, step two of Carlsson and Berkes model could be achieved by focusing on how a decentralised approach to protected areas and specifically a WHA could be devised. This may represent the problem to be solved and mapping the tasks in order to explore this could be achieved through a participative research agenda that uses issues raised in this thesis.

Second, the research in this thesis found that by using adaptive co-management as a process of governance, complex multi-levelled stakeholder relationships were explored within this potential WHA. In the Pacific, there is an identified need for ways to better understand the relationship between World Heritage and local level stakeholders, particularly those with customary landownership rights and their relationship to WHAs (Smith 2011; Trau, Ballard & Wilson 2012; Wilson, Ballard & Kalotiti 2007). Govan (2009, p. 75) suggests in the Pacific that, 'significant differences between community implemented closures and protected areas do of course exist and it is urgent to explore these differences before planners design national approaches'. However, as Trau et al. (2012) found in a WHA in Vanuatu, the lack of integration of local and traditional forms of natural resource management has led to the need for local level stakeholders to 'localize' the World Heritage framework retrospectively. In a study in Canada, which specifically focuses on World Heritage designation and the role of local level stakeholders prior to designation, Lemelin and Bennett (2010) state there is a need to work with all levels of existing governance to design empowering forms of co-management as a site works towards meeting the obligations of World Heritage designation. The results in this thesis have provided a possible way of exploring values

and stakeholder relationships, prior to creating a policy framework within which World Heritage can sit, where the values of local, regional and national stakeholders can be explored. By defining the complex social-ecological arena under focus and exploring the multi-levelled forms of governance that already exist, other potential WHAs in the Pacific may be able to understand the complex relationships that influence natural resource management and work towards a system of protection where local level values such as landownership can be considered.

Currently, World Heritage:

> can be seen as synonymous to 'contested heritage', with a great number of interested parties ranging from local, regional, national and international stakeholders exercising conflicting claims and rights of ownership, use and interpretation over a single heritage site. (Rakic & Chambers 2008, p. 147)

In particular, property rights and forms of ownership within World Heritage have recently come into the spotlight of the academic community (Ekern, Logan, Sauge & Sinding-Larsen 2012). World Heritage nomination *is* still largely top down and retrospective in gaining local communities support for the listed site (Hill et al. 2011; Sullivan 2004) and Frey and Steiner (2011, p. 559) purport 'the involvement in the process of getting on the World Heritage List' primarily, 'strengthens a country's relationship with the international heritage movement'. Property rights and specifically 'customary tenure still remains a relatively obscure form of tenure amongst properties on the World Heritage list' (Gillespie 2009, p. 348). In the context where community-based property rights exist, the entire process of identifying, nominating and inscribing a WHA remains relatively under researched.

Third, in order to understand what a rights-based approach to World Heritage may look like in PNG and the Pacific more broadly, continued anthropological and sociological research is required. This research has begun to explore the current relationship between nature and culture in the complex social ecological context of the Kokoda Track. The communities of the Kokoda Track are dynamic and complex and the relationship between the people and the land has changed since the introduction of tourism as a result of the cash economy, and modernisation in general. As such, literature exploring the complexities of customary landownership and its role in society need to be

continuously revisited to provide insight as to how the traditional forms of communal land ownership and management functions in contemporary society.

> Local resident community's values and needs, particularly their ability to alienate land, must be given priority before, during and after the imposition of a World Heritage classification. To do otherwise results in a piece- meal, fragmented regulatory process where managers and residents alike are unclear of their obligations, duties and responsibilities in the protection of the 'outstanding universal value' of a unique World Heritage site. A comprehensive and tailored regulatory package which gives voice to the concerns of residents while remaining sympathetic to heritage protection is a more just, equitable and desirable outcome for World Heritage site management. (Gillespie 2009, p. 349)

As Lea (1993) points out, many western approaches working with traditional forms of land rights such as customary landownership assume that a collectivist culture in Melanesian societies exists. However, with globalisation and modernisation new anthropological and sociological understanding of the complexities and dynamism in landownership is required (Curry, Koczberski & Connell 2012Curry, Koczberski & Connell 2012),The process of creating a framework to understand these complex social-ecological relationships that manage natural resources, such as the one in this thesis, may be able to influence protected area policy and consequently contribute to a more decentralised approach to establishing WHAs.

5.6 Conclusion

In recent years there has been a trend towards a more sophisticated and multifaceted understanding of sustainable environmental management. The purpose of this thesis has been to explore co-management as a vehicle for understanding stakeholder collaboration and the development of a World Heritage nomination for the Kokoda Track. To do this, the author engaged with two key areas of scholarship, 'protected area management' and 'natural resource management', with a view to operationalising a process to understand complex stakeholder relationships that influence natural resource management. This thesis has then illustrated that stakeholder values and relationships influence the process of managing natural resources and in the case of the Kokoda Track, local level stakeholder value positions are important due to the nature of customary landownership in the region.

This research has contributed to the academic body of knowledge by creating a context specific framework which can be operationalised. As a result a complex social-ecological arena was found in which multi-levelled governance exists. This knowledge may be used to better understand the relational dimensions that influence the development of the WHA nomination for the Kokoda Track. As the fields of theory and practice of World Heritage continue to change and new ideologies, such as the rights-based approach to protecting the world's heritage, continue to evolve a more comprehensive agenda for social justice in conservation will become necessary. This thesis demonstrates the importance of property rights in this potential WHA and provides a path towards formalising the multi-levelled governance system that incorporates customary landownership as a central feature.

Appendix A. Interview Schedule

Interview Schedule: sub-headings, questions and points to be address in informal interviews and the focus group:

Landownership

- Can you tell me the history of your land? What resources, if any, do you share with other communities or stakeholders?
- Do you make some sort of agreements about how you will use the shared resources? Such as waterways or gardens etc
- Can you tell me if you have any formal or informal (written or verbal) agreements with other communities or stakeholders about using your land?
- Tell me about any restrictions you place on passing villagers or tour operators to ensure they respect you land.

Natural Environment

- What do you think is special about your village and the surrounding area?
- Why do you think people come to this region?
- Do you share theses thoughts in common with other communities? Tour operators? Government?
- What changes have you seen in the last 10 years in respect to the natural environment? Tell me about changes in your village?
- What would you like best to preserve in your community? E.g your culture, your community's history, the physical environment you call home?
- What do you think about making the area a national park or World Heritage site?
- Do you know of any plans to establish a park here? Tell me your thoughts on this idea.

Communication

- Tell me about who you regularly do business with among other groups who use the track?
- Who would you talk to if you felt there was a problem with another community group or people misusing the track and the environment?
- Who would you talk to if you had a problem with a tour operator?
- Who do you think you could discuss issues of track management with? Do you see any rangers around your village?

Relationships

- Tell me about the relationships you have with other stakeholders, e.g.
    - Local management authority
    - National government
    - Tour operators
    - NGOs
    - Other communities along the track
- Do you have trust between you and other stakeholders? Can you tell me about this?
- Which stakeholders do you feel comfortable doing business with?
- Do you think it is one person's job to manage and protect the area? Who do you think is most appropriate to manage the entire Kokoda Track area?

Appendix B. Information Sheet and Consent Form

Communities, Co-Management and World Heritage:
The Case of Kokoda

- Amy Louise Bott -
PhD research project in the Faculty of Business, University of Technology, Sydney

Dear _________

My name is Amy Louise Bott and I am a PhD researcher.

Due to your outstanding role as a …, I would kindly like to ask you to participate in this research. I am conducting a study with the key stakeholders of the Kokoda Track region with the aim of exploring co-management as a vehicle for collaboration and a tool for the development of a World Heritage Area. This research forms part of my PhD thesis, which is being conducted at the University of Technology, Sydney / Australia. All information given by you is fully confidential and will be used for research purposes only.

I am requesting your participation in the form of an informal interview or focus group. The entire process should take between 30-60 minutes for an informal one on one interview and 60-90 minutes for a focus group discussion (*Will advise either interview/focus group when requested participation*). I will be conducting these interviews and focus groups in early 2012 in both Port Moresby and in villages along the Kokoda Track in Papua New Guinea, and also in Sydney and Canberra in Australia. I would be happy to arrange a time with you based on a convenient location in early 2012. I will be conducting the study in Papua New Guinea in February and March and back in Australia to continue throughout April. I will liaise with you to confirm dates closer to the time.

In appreciation for your participation in this study, I am happy to pass along all final reports along with any publications that come out of this research. Please note, that participation in this study will require your consent to the use of your organisation and your role within that organisation to be identified. You can choose to opt out of this condition, and opt of out the study at any time without consequence. If you have any questions at any time, please feel free to contact myself, or my chief supervisor, Dr Stephen Wearing on (02) 9514 5432 or Stephen.Wearing@uts.edu.au

I am looking forward to speaking to you soon,

Kind Regards,

Amy Louise Bott
PhD Candidate
Events, Leisure, Sport and Tourism
Management Discipline Group
UTS: Business
University of Technology, Sydney
amy.bott@uts.edu.au
Ph: 9514 5843

UNIVERSITY OF TECHNOLOGY, SYDNEY

Communities, Co-Management and World Heritage: The Case of Kokoda

I ____________________ *(participant's name)* agree to participate in the research project "Communities, Co-Management and World Heritage: The Case of Kokoda" being conducted by Amy Louise Bott, PO Box 222, Lindfield 2070, NSW Australia, Tel: +61 2 9514 5843 of the University of Technology, Sydney for her PhD degree in Leisure, Sport and Tourism in UTS: Business.

I understand that the purpose of this study is to explore the potential of co-management as a practical approach to World Heritage area establishment and management.

I understand that my participation in this research will involve a 30-60 minute informal in-depth interview and/or participation in a 60-90 minute focus group on the research topic.

I am aware that I can contact Amy Louise Bott or her supervisor Mr Stephen Wearing, PO Box 222, Lindfield 2070, NSW Australia, Tel: +61 2 9514 5432 or her co-supervisor Ms Genevieve Nelson of the Kokoda Track Foundation, PO Box 1674 North Sydney 2059, NSW Australia, Tel: 9252 2992 if I have any concerns about the research. I also understand that I am free to withdraw my participation from this research project at any time I wish, without consequences, and without giving a reason.

I agree that Amy Louise Bott has answered all my questions fully and clearly.

I agree that the research data gathered from this project may be published and I agree to the conditions discussed where by the organisation (stakeholder group) I represent and potentially my position will be associated with comments I make.

____ ____/____/____

Signature (participant)

____ ____/____/____

Signature (researcher or delegate)

NOTE:

This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer (ph: 02 9514 9772, Research.Ethics@uts.edu.au) and quote the UTS HREC reference number. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

References

Agrawal, A. 2001, 'Common Property Institutions and Sustainable Governance of Resources', *World Development*, vol. 29, no. 10, pp. 1649-72.

Agrawal, A. 2007, 'Forests, Governance, and Sustainability: Common Property Theory and its Contributions', *International Journal of the Commons*, vol. 1, no. 1, pp. 111-36.

Agrawal, A. & Chhatre, A. 2006, 'Explaining success on the commons: Community forest governance in the Indian Himalaya', *World Development*, vol. 34, no. 1, pp. 149-66.

Agrawal, A. & Gupta, K. 2005, 'Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai', *World Development*, vol. 33, no. 7, pp. 1101-14.

Aplin, G. 2002, *Heritage: Identification, conservation and management*, Oxford University Press.

Armitage, D., Berkes, F., Dale, A., Kocho-Schellenberg, E. & Patton, E. 2011, 'Co-management and the co-production of knowledge: Learning to adapt in Canada's Arctic', *Global Environmental Change*, vol. 21, no. 3, pp. 995-1004.

Armitage, D.R., Berkes, F. & Doubleday, N. 2007a, *Adaptive co-management: collaboration, learning, and multi-level governance*, Univ of British Columbia Pr, Vancouver.

Armitage, D.R., Berkes, F. & Doubleday, N. 2007b, 'Introduction: Moving Beyond Co-Management', in D.R. Armitage, F. Berkes & N. Doubleday (eds), *Adaptive co-management: collaboration, learning, and multi-level governance*, University of British Columbia Press, Vancouver, pp. 1-15.

Armitage, D.R., Marschke, M. & Plummer, R. 2008, 'Adaptive co-management and the paradox of learning', *Global Environmental Change*, vol. 18, no. 1, pp. 86-98.

Armitage, D.R., Plummer, R., Berkes, F., Arthur, R.I., Charles, A.T., Davidson-Hunt, I.J., Diduck, A.P., Doubleday, N.C., Johnson, D.S. & Marschke, M. 2008, 'Adaptive co-management for social-ecological complexity', *Frontiers in Ecology and the Environment*, vol. 7, no. 2, pp. 95-102.

Australian Associated Press 2007, *Kokoda Trail 'to be re-routed'*, The Age, viewed 2 November 2010 <http://www.theage.com.au/news/world/kokoda-trail-to-be-rerouted/2007/11/01/1193619054792.html>.

Australian Associated Press 2009, *Missing Kokoda plane wreckage found*, The Age, viewed 15 August 2010 <http://www.theage.com.au/world/missing-kokoda-plane-wreckage-found-20090812-eh9x.html>.

Avrahm, R. & Camara, K. 2008, 'Tragedy of Human Commons', *Northwest Interdisciplinary Law Review*, vol. 1, pp. 15-54.

Balint, P.J. 2006, 'Improving community-based conservation near protected areas: the importance of development variables', *Environmental Management*, vol. 38, no. 1, pp. 137-48.

Ballard, C. & Wilson, M. 2006, *Cheif Rio Mata's Domain*, *Nomination by the Republic of Vanuatu for Inscription on the World Hertiage List*, UNESCO, <http://whc.unesco.org/en/list/1280>.

Baral, N., Stern, M.J. & Heinen, J.T. 2007, 'Integrated conservation and development project life cycles in the Annapurna Conservation Area, Nepal: Is development overpowering conservation?', *Biodiversity & Conservation*, vol. 16, no. 10, p. 2903.

Barker, J., McKellin, W.H. & Iteanu, A. 1991, *Person, society and the ritual system among the Orokaiva*, vol. 26, no 2, Royal Anthropological Institute of Great Britain and Ireland, pp. 342-8.

Bartlett, C., Maltali, T., Petro, G. & Valentine, P. 2010, 'Policy implications of protected area discourse in the Pacific islands', *Marine Policy*, vol. 34, no. 1, pp. 99-104.

Basu, P.K. 2000, 'Conflicts and paradoxes in economic development: Tourism in Papua New Guinea', *International Journal of Social Economics*, vol. 27, no. 7, pp. 907-16.

Bentrupperbaumer, J.M., Day, T.J. & Reser, J.P. 2006, 'Uses, meanings, and understandings of values in the environmental and protected area arena: A consideration of World Heritage values', *Society and Natural Resources*, vol. 19, no. 8, pp. 723-41.

Berkes, F. 2007a, 'Adaptive Co-Management and Complexity: Exploring the Many Faces of Co-Management', in D.R. Armitage, F. Berkes & N. Doubleday (eds), *Adaptive co-management: collaboration, learning, and multi-level governance*, University of British Columbia Press, Vancouver, pp. 19-37.

Berkes, F. 2007b, 'Commons in a multi-level world', *International Journal of the Commons*, vol. 2, no. 1, pp. 1-6.

Berkes, F. 2008, 'Evolution of co-management: Role of knowledge generation, bridging organizations and social learning', *Journal of Environmental Management*, vol. 90, no. 5, pp. 1692-702.

Berkes, F., Berkes, M.K. & Fast, H. 2007, 'Collaborative integrated management in Canada's north: The role of local and traditional knowledge and community-based monitoring', *Coastal Management*, vol. 35, no. 1, pp. 143-62.

Berkes, F. & Folke, C. 1998, 'Linking social and ecological systems: management practices and social mechanisms for building resilience', in F. Berkes & C. Folke (eds), *Linking social and ecological systems for resilience and sustainability*, Cambridge University Press, Cambridge, pp. 1-26.

Berkes, F., George, P.J. & Preston, R.J. 1991, *Co-management: the evolution of the theory and practice of joint administration of living resources*, Program for Technology Assessment in Subarctic Ontario, McMaster University.

Berkes, F., Mahon, R. & McConney, P. 2001, *Managing small-scale fisheries: alternative directions and methods*, IDRC (International Development Research Centre).

Berkes, F., Reid, W.V., Wilbanks, T.J. & Capistrano, D. 2006, 'Bridging scales and knowledge systems', *Bridging scales and knowledge systems: concepts and applications in ecosystem assessment*, p. 315.

Bhanugopan, R. 2001, 'Tourism development in Papua New Guinea: strategies for success', *Asia Pacific Journal of Tourism Research*, vol. 6, no. 2, pp. 65-73.

Blodgett, A.T., Schinke, R.J., Smith, B., Peltier, D. & Pheasant, C. 2011, 'In indigenous words: Exploring vignettes as a narrative strategy for presenting the research voices of aboriginal community members', *Qualitative inquiry*, vol. 17, no. 6, pp. 522-33.

Boonzaier, E. 1996, 'Local responses to conservation in the Richtersveld National Park, South Africa', *Biodiversity and Conservation*, vol. 5, no. 3, pp. 307-14.

Borrini-Feyerabend, G. & Jaireth, H. 2004, *Sharing Power: Learning by doing in co-management of natural resources throughout the world*, International institute for environment and development (IIED). Natural resources group.

Borrini-Feyerabend, G., Johnston, J. & Pansky, D. 2006, 'Governance of Protected Areas', in M. Lockwood, G. Worboys & A. Kothari (eds), *Managing Protected Areas: A Global Guide*, Earthscan, Sterling, pp. 116-45.

Bott, A.L. 2010, 'World Heritage, Tourism and Communities', unpublished honours thesis, University of Technology, Sydney.

Boydell, S. & Holzknecht, H. 2003, 'Land‚Äîcaught in the conflict between custom and commercialism', *Land Use Policy*, vol. 20, no. 3, pp. 203-7.

Brandon, K., Redford, K.H. & Sanderson, S.E. 1998, *Parks in peril: people, politics, and protected areas*, Island Press, Washington DC.

Brawley, S. & Dixon, C. 2009, 'Who Owns the Kokoda Trail? Australian Mythologies, Colonial Legacies and Mining in Papua New Guinea', *Editorial Collective*, vol. 28, no. 4, p. 24.

Brechin, S., Wilshusen, P., Fortwangler, C. & West, P. 2004, 'Contested nature: promoting international biodiversity with social justice in the twenty-first century', *Journal of Ecological Anthropology*, vol. 8, p. 84.

Bromley, D.W. 1997, 'Property regimes in environmental economics', *The International Yearbook of Environmental and Resource Economics*, vol. 1998, pp. 1-27.

Bryant, N. 2009, *The Revitalisation of Anzac Day*, BBC, <http://www.bbc.co.uk/blogs/thereporters/nickbryant/2009/04/the_revitalisation_of_anzac_da.html>.

Bryman, A. 2008, *Social Research Methods*, 3 edn, Oxford University Press Inc., Oxford.

Buck Cox, S.J. 2008, 'No tragedy of the commons', *Environmental Ethics*, vol. 7, no. 1, pp. 49-61.

Bushell, R. 2005, 'Building support for protected areas through tourism', in J.A. McNeely (ed.), *Friends for Life: New partners in support of protected areas*, IUCN, Gland, Switzerland and Cambridge, UK, pp. 141-54.

Butler, J.R.A., Middlemas, S.J., Graham, I.M. & Harris, R.N. 2010, 'Perceptions and costs of seal impacts on Atlantic salmon fisheries in the Moray Firth, Scotland: Implications for the adaptive co-management of seal-fishery conflict', *Marine Policy*, vol. 35, no. 3, pp. 317-23.

Callicott, J.B., Crowder, L.B. & Mumford, K. 1999, 'Current normative concepts in conservation', *Conservation Biology*, vol. 13, no. 1, pp. 22-35.

Cardenas-Torres, N., Enriquez-Andrade, R. & Rodriguez-Dowdell, N. 2007, 'Community-based management through ecotourism in Bahia de los Angeles, Mexico', *Fisheries Research*, vol. 84, no. 1, pp. 114-8.

Carlsen, J. 2012, *The Economic Significance of the Trekking on the Kokoda Track, PNG in 2011*, Report to the Kokoda Track Authority. Curtin Sustainable Tourism Centre: Curtin University, Perth.

Carlsson, L. & Berkes, F. 2005, 'Co-management: concepts and methodological implications', *Journal of Environmental Management*, vol. 75, no. 1, pp. 65-76.

Castro, A.P. & Nielsen, E. 2001, 'Indigenous people and co-management: implications for conflict management', *Environmental Science & Policy*, vol. 4, no. 4-5, pp. 229-39.

Chuenpagdee, R. & Jentoft, S. 2007, 'Step zero for fisheries co-management: What precedes implementation', *Marine Policy*, vol. 31, no. 6, pp. 657-68.

Cinner, J.E. & Aswani, S. 2007, 'Integrating customary management into marine conservation', *Biological Conservation*, vol. 140, no. 3-4, pp. 201-16.

Clarke, P. & Jupiter, S.D. 2010, 'Law, custom and community-based natural resource management in Kubulau District (Fiji)', *Environmental Conservation*, vol. 37, no. 1, pp. 98-106.

Colchester, M. 1994, *Salvaging Nature: Indigenous peoples, protected areas and biodiversity conservation*, DIANE Publishing.

Colchester, M. 2004, 'Conservation policy and indigenous peoples', *Environmental Science & Policy*, vol. 7, no. 3, pp. 145-53.

Creswell, J.W. 1998, *Qualitative inquiry and research design: Choosing among five traditions*, Sage Publications, Inc, Thousand Oaks.

Crocombe, R.G. & Hogbin, G. 1963, *Land, work, and productivity at Inonda*, New Guinea Research Unit, Australian National University.

Cullen-Unsworth, L.C., Hill, R., Butler, J.R.A. & Wallace, M. 2012, 'A research process for integrating Indigenous and scientific knowledge in cultural landscapes: principles and determinants of success in the Wet Tropics World Heritage Area, Australia', *The Geographical Journal*, vol. 178, no. 4, pp. 351-65.

Curry, G.N., Koczberski, G. & Connell, J. 2012, 'Introduction: enacting modernity in the Pacific?', *Australian Geographer*, vol. 43, no. 2, pp. 115-25.

Dale, N. 1989, 'Getting into Co-Management: Social Learning in the Redesign of Fisheries Management', in E. Pinkerton (ed.), *Co-operative management of local fisheries*, University of British Columbia Press, Vancouver, pp. 49-72.

Dasmann, R. 1984, *The relationship between protected areas and indigenous peoples*, Smithsonian Institution Press, Washington.

Davis, D. & Weiler, B. 1992, 'Kakadu National Park -- conflicts in a world heritage area', *Tourism Management*, vol. 13, no. 3, pp. 313-20.

Day, J. 2002, 'Marine park management and monitoring-lessons for adaptive management from the Great Barrier Reef', *Managing Protected Areas in a Changing World: Fourth International Conference on Science and Management of Protected Areas*, eds S. Bondrup-Nielsen, N. Munro, G. Nelson, J. Willison, T. Herman & P. Eagles, Science and Management of Protected Areas Association.

De Lacy, T. & Lawson, B. 1997, *The Uluru-Kakadu model: joint management of Aboriginal owned national parks in Australia*, Island Press, Washington DC.

de Moor, T. & Berge, E. 2007, 'Welcome to the International Journal of the Commons', *International Journal of the Commons*, vol. 1, no. 1, pp. 1-2.

De Young, C., Charles, A. & Hjort, A. 2008, *Human dimensions of the ecosystem approach to fisheries: an overview of context, concepts, tools and methods*, Food and Agricultural Organisation of the United Nations, Rome.

Denham, T. 2012, 'Building institutional and community capacity for World Hertiage in Papua New Guinea', in UNESCO (ed.), *World Heritage in a Sea of Islands: Pacific 2009 Programme* vol. World Hertiage Papers 34, UNESCO, Paris.

Denzin, N.K. & Lincoln, Y.S. 2005, *The Sage handbook of qualitative research*, Sage Publications, Incorporated.

Department of Environment and Conservation 2011, *Department of Environment and Conservation New Strategic Direction*, viewed 5 March 2013 <http://www.dec.gov.pg/highlights/strategic-direction-initiative.html>.

Department of Environment and Conservation & Department of Sustainability, Environment, Water, Population and Communities 2012, *Kokoda Initiative Annual Report 2011-2012*.

Department of Environment and Conservation 2011, *A Protected Area Policy for a National Protected Area System for Papua New Guinea*, Department of Environment and Conservation, Port Moresby.
Department of Environment Water Heritage and the Arts 2010, *The Kokoda Initiative*, Australian Government, Canberra, <http://www.environment.gov.au/heritage/international-projects/kokoda/kokoda-initiative.html>.
Department of Lands and Physical Planning 2005, *Land Tenure System in Papua New Guinea* viewed 20 November 2012 <http://www.lands.gov.pg/Services/Land_Administration/LA_Services/Land_Acquisition/Land_Tenure.html>.
Di Giovine, M. 2009, *The Heritage-scape: UNESCO, World Heritage, and Tourism*, Lexington Books, Plymouth.
Dickson-Waiko, A. 2003, 'The Missing Rib: Mobilizing Church Women for Change in Papua New Guinea', *Oceania*, vol. 74, no. 1/2, pp. 98-119.
Dudley, N. 2009, *Guidelines for Applying Protected Area Managment Categories*, International Union for Conservation of Nature and Natural Resources, Gland.
Durning, A. 1992, *Guardians of the land: Indigenous peoples and the health of the earth*, Worldwatch Institute Washington DC.
Eaton, P. 1997, 'Conservation through Cultural Survival', in S. Stevens (ed.), *Conservation through cultural survival: Indigenous peoples and protected areas*, Island Press, Washington DC, pp. 225-36.
Edroma, E.L. 2004, 'Linking Universal and Local Values for the Sustainable Management of World Hertiage Sites', *Linking Universal and Local Values: Managing a Sustainable Future for World Heritage*, vol. 13, eds E. de Merode, R. Smeets & C. Westrik, UNESCO World Hertiage Centre Paris, The Netherlands, pp. 36-42.
Ekern, S., Logan, W., Sauge, B. & Sinding-Larsen, A. 2012, 'Human rights and World Heritage: preserving our common dignity through rights-based approaches to site management', *International Journal of Heritage Studies*, vol. 18, no. 3, pp. 213-25.
Evans, G. 2005, 'Mundo Maya: From Cancun to City of Culture: World Heritage in Post-colonial Mesoamerica', in D. Harrison & M. Hitchcock (eds), *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Books, London, pp. 30-49.
Feeny, D., Berkes, F., McCay, B.J. & Acheson, J.M. 1990, 'The tragedy of the commons: twenty-two years later', *Human Ecology*, vol. 18, no. 1, pp. 1-19.
Ferse, S.C.A., Manez Costa, M., Schwerdtner Manez, K., Adhuri, D.S. & Glaser, M. 2010, 'Allies, not aliens: increasing the role of local communities in marine protected area implementation', *Environmental Conservation*, vol. 37, no. 1, pp. 23-34.
Fingleton, J. 2004, 'Is Papua New Guinea viable without customary groups?', *Pacific Economic Bulletin*, vol. 19, no. 2, pp. 96-103.
Flyvbjerg, B. 2006, 'Five misunderstandings about case-study research', *Qualitative inquiry*, vol. 12, no. 2, pp. 219-45.
Foale, S. & Manele, B. 2004, 'Social and political barriers to the use of marine protected areas for conservation and fishery management in Melanesia', *Asia Pacific Viewpoint*, vol. 45, no. 3, pp. 373-86.
Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C.S. & Walker, B. 2002, 'Resilience and sustainable development: building adaptive capacity in a world

of transformations', *AMBIO: A journal of the human environment*, vol. 31, no. 5, pp. 437-40.

Folke, C., Hahn, T., Olsson, P. & Norberg, J. 2005, 'Adaptive governance of social-ecological systems', *Annual Review of Environment and Resources*, vol. 30, pp. 441-73.

Frey, B. & Steiner, L. 2011, 'World Heritage List: does it make sense?', *International Journal of Cultural Policy*, vol. 17, no. 5, pp. 555-73.

Furze, B., Lacy, T. & Birckhead, J. 1996, *Culture, conservation and biodiversity: the social dimension of linking local level development and conservation through protected areas*, John Wiley & Sons.

Fyall, A. & Rakic, T. 2006, 'The future market for World Heritage Sites', in A. Leask & A. Fyall (eds), *Managing World Heritage Sites*, Elsevier Ltd, Oxford, pp. 159-77.

George, M., Innes, J. & Ross, H. 2004, *Managing sea country together: key issues for developing co-operative management for the Great Barrier Reef World Heritage Area*, CRC Reef Research Centre, Townsville.

Gillespie, J. 2009, 'Protecting World Heritage: Regulating Ownership and Land Use at Angkor Archaeological Park, Cambodia', *International Journal of Heritage Studies*, vol. 15, no. 4, pp. 338-54.

Goddard, M. 2001, 'Rethinking western Motu descent groups', *Oceania*, vol. 71, no. 4, pp. 313-33.

Gomm, R., Hammersley, M. & Foster, P. 2000, 'Case study and theory', in R. Gomm, M. Hammersley & P. Foster (eds), *Case study method*, Sage Publications, London, pp. 19-26.

Goodwin, H. & Roe, D. 2001, 'Tourism, livelihoods and protected areas: opportunities for fairtrade tourism in and around National parks', *International journal of tourism research*, vol. 3, no. 5, pp. 377-91.

Gosarevski, S., Hughes, H. & Windybank, S. 2004, 'Is Papua New Guinea viable?', *Pacific Economic Bulletin*, vol. 19, no. 1, pp. 134-48.

Govan, H. 2009, *Status and potential of locally-managed marine areas in the Pacific Island Region: meeting nature conservation and sustainable livelihood targets through wide-spread implementation of LMMAs*, SPREP/WWF/WorldFish-Reefbase/CRISP, Suva, Fiji.

Govan, H. & Jupiter, S. 2013, 'Can the IUCN 2008 protected areas management categories support Pacific Island approaches to conservation? ', *Parks*, vol. 19, no. 1, pp. 73-80.

Grabowski, S. 2007, 'Ecotrekking: a viable development alternative for the Kokoda track?', University of Technology Sydney, Sydney.

Guaigu, G., Prideaux, B. & Pryce, J. 2012, 'Governance and tourism policy in Papua New Guinea (PNG) - An evaluation', *CAUTHE 2012: The new golden age of tourism and hospitality; Book 1; Proceedings of the 22nd Annual Conference*, La Trobe University, pp. 216 -29.

Guba, E.G. & Lincoln, Y.S. 1998, 'Competing paradigms in qualitative research', in N.K. Denzin & Y.S. Lincoln (eds), *The Landscape of Qualitative Research: Theories and Issues*, Sage Publications, Thousand Oaks, pp. 195-220.

Hahn, T., Olsson, P., Folke, C. & Johansson, K. 2006, 'Trust-building, knowledge generation and organizational innovations: the role of a bridging organization for adaptive comanagement of a wetland landscape around Kristianstad, Sweden', *Human Ecology*, vol. 34, no. 4, pp. 573-92.

Hales, R.J., Rynne, J., Howlett, C., Devine, J. & Hauser, V. 2013, 'Indigenous free prior informed consent: a case for self determination in World Heritage nomination processes', *International Journal of Heritage Studies*, vol. 9, no. 13, pp. 1-18.

Hardin, G. 1968, 'The Tragedy of the Commons', *Science*, vol. 162, pp. 1243-8.

Harrison, D. & Hitchcock, M. 2005, *The politics of world heritage: negotiating tourism and conservation*, Channel View Books.

Hay, P. 2001, *Main currents in western environmental thought*, New South Wales University Press Ltd, Sydney.

Hill, R. 2006, 'The effectiveness of agreements and protocols to bridge between Indigenous and non-Indigenous toolboxes for protected area management: a case study from the wet tropics of Queensland', *Society and Natural Resources*, vol. 19, no. 7, pp. 577-90.

Hill, R. 2011, 'Towards Equity in Indigenous Co-Management of Protected Areas: Cultural Planning by Miriuwung-Gajerrong People in the Kimberley, Western Australia', *Geographical Research*, vol. 49, no. 1, pp. 72-85.

Hill, R., Cullen-Unsworth, L.C., Talbot, L.D. & McIntyre-Tamwoy, S. 2011, 'Empowering Indigenous peoples: biocultural diversity through World Heritage cultural landscapes: a case study from the Australian humid tropical forests', *International Journal of Heritage Studies*, vol. 17, no. 6, pp. 571-91.

Ho, T.V.T., Cottrell, A., Valentine, P. & Woodley, S. 2012, 'Perceived barriers to effective multilevel governance of human-natural systems: an analysis of Marine Protected Areas in Vietnam', *Journal of Political Ecology*, vol. 19, pp. 18-35.

Holling, C.S. 1978, *Adaptive environmental assessment and management*, Wiley, New York.

Hughes, H. 2004, 'The Pacific is Viable!', *The Centre for Independent Studies*, no. 53.

ICOMOS 1993, *Tourism at World Heritage Sites: The Site Manager's Handbook*, World Tourism Organization Madrid.

Iftekhar, M.S. & Takama, T. 2007, 'Perceptions of biodiversity, environmental services, and conservation of planted mangroves: a case study on Nijhum Dwip Island, Bangladesh', *Wetlands Ecology and Management*, vol. 16, no. 2, pp. 119-37.

Imbal, J. 2010, 'Contemporary Challenges Facing the Development and Management of Culture Tourism in Papua New Guinea', *Contemporary PNG Studies*, vol. 12, no. May 2010, pp. 12-28.

Independent Consumer and Competition Commission 2006, *Issues Paper PNG Tourism Industry Review 30 May 2006*, Independent Consumer and Competition Commission, Boroko, viewed 15 August 2010 <http://www.iccc.gov.pg/docs/Tourism Issues Paper_Final.pdf>.

Jeanrenaud, S. 2002, 'Changing people/nature representations in international conservation discourses', *IDS Bulletin*, vol. 33, no. 1, pp. 111-22.

Jimura, T. 2010, 'The impact of world heritage site designation on local communities - A case study of Ogimachi, Shirakawa-mura, Japan', *Tourism Management*, vol. In Press, Corrected Proof.

Jones, P.J.S. & Burgess, J. 2005, 'Building partnership capacity for the collaborative management of marine protected areas in the UK: a preliminary analysis', *Journal of Environmental Management*, vol. 77, no. 3, pp. 227-43.

Kaitokai, E. 2012, 'Department of Environment and Conservation: Social Mapping Update', *Kokoda Initiative Forum, March 27th 2012*, Kokoda Initiative, Mercure Hotel, Sydney.

Kaldun, B. 2003, 'Partnerships for Empowered Participation: Mainstreaming a Community-Based Paradigm for World Heritage Management', *Linking*

Universal and Local Values: Managing a Sustainable Future for World Heritage, vol. 13, eds E. Merode, R. Smeets & C. Westrik, UNESCO World Heritage Centre Paris, The Netherlands, pp. 115-20.

Keen, M. & Mahanty, S. 2006, 'Learning in sustainable natural resource management: Challenges and opportunities in the Pacific', *Society and Natural Resources*, vol. 19, no. 6, pp. 497-513.

Kila Pat, R.L. 2003, 'Customary Land Tenure in a Changing Context', paper presented to the *Second Regional Pacific Meeting*, Brisbane, September 7th - 9th

Kofinas, G.P. 2005, 'Caribou Hunters and Researchers at the Co-management Interface: Emergent Dilemmas and the Dynamics of Legitimacy in Power Sharing', *Anthropologica*, vol. 47, no. 2, pp. 179--96.

Kokoda Track Authority 2012a, *About the Kokoda Track Authority*, viewed 15 August 2012 <http://www.kokodatrackauthority.org/kokoda-track-authority/about-the-kokoda-track-authority_idl=1_idt=1256_id=5665_.html>.

Kokoda Track Authority 2012b, *Funding to Kokoda Track Communities*, viewed 18 December 2012 <http://www.kokodatrackauthority.org/kokoda-track-authority/funding-to-kokoda-track-communities_idl=1_idt=1256_id=5678_.html>.

Kokoda Track Foundation 2010, *Kokoda Track Foundation Annual Report 2010*.

Kokoda Track Foundation Limited 2012, *Annual Report for the financial year ended 31 December 2012*.

Kothari, A. 2006, 'Collaboratively Managed Protected Areas', in G. Borrini-Feyerabend, G. Worboys & A. Kothari (eds), *Managing Protected Areas: A Global Guide*, Earthscan, Sterling, pp. 528-48.

Kremen, C., Merenlender, A.M. & Murphy, D.D. 1994, 'Ecological monitoring: a vital need for integrated conservation and development programs in the tropics', *Conservation Biology*, vol. 8, no. 2, pp. 388-97.

Kumar, R. & Murck, B. 1992, *On common ground: managing human-planet relationships*, John Wiley & Sons Canada Ltd., Rexdale, Ontario.

Kusworo, A. & Lee, R.J. 2008, 'Biodiversity conservation and indigenous peoples in Indonesia,: the Krui people in Southern Sumatra as a case study', in N.S. Sodhi, G. Acciaioli, M. Erb & A.K.J. Tan (eds), *Biodiversity and human livelihoods in protected areas: case studies from the Malay Archipelago*, Cambridge University Press, Cambridge, pp. 111-21.

Lea, D.R. 1993, 'Melanesian Axiology, Communal Land Tenure, and the Prospect of Sustainable Development within Papua New Guinea', *Journal of Agricultural and Environmental Ethics*, vol. 6, no. 1, pp. 89-101.

Leask, A. & Fyall, A. 2006, *Managing world heritage sites*, Elsevier, Oxford.

Lemelin, R.H. & Bennett, N. 2010, 'The proposed Pimachiowin Aki World Heritage Site Project: management and protection of indigenous world heritage sites in a Canadian context', *Leisure/Loisir*, vol. 34, no. 2, pp. 169-87.

Lew, A.A., Hall, C.M. & Williams, A.M. 2004, *A Companion to Tourism*, Blackwell Publishing, Blackwell.

Leys, A.J. & Vanclay, J.K. 2010, 'Social learning: A knowledge and capacity building approach for adaptive co-management of contested landscapes', *Land Use Policy*, vol. 28, no. 3, pp. 574-84.

Li, M., Wu, B. & Cai, L. 2008, 'Tourism development of World Heritage Sites in China: A geographic perspective', *Tourism Management*, vol. 29, no. 2, pp. 308-19.

Libecap, G.D. 2011, *The Euro and The Tragedy of the Commons*, Leland Stanford Junior University, viewed 13 May 2013 <http://www.hoover.org/publications/defining-ideas/article/102281>.

Lin, P.S. & Chang, C.Y. 2011, 'Towards sustainable community-based natural resource management in the indigenous Meqmegi community in Taiwan: Rethinking impacts of local participation', *Natural Resources Forum*, vol. 35, Wiley Online Library, pp. 134-44.

Lockwood, M. & Kothari, A. 2006, 'Social Context', in M. Lockwood, G. Worboys & A. Kothari (eds), *Managing protected areas: a global guide*, CSIRO, Trowbridge, pp. 41-72.

Lockwood, M., Worboys, G. & Kothari, A. 2006, *Managing protected areas: a global guide*, CSIRO, Trowbridge.

Lynch, O. & Alcorn, J. 1994, 'Tenurial rights and community based conservation', in D. Western, S.C. Strum & R.M. Wright (eds), *Natural connections: perspectives in community-based conservation*, Island Press, Covelo, CA, pp. 273-92.

Magi, L. & Nzama, T.A. 2009, 'Tourism strategies and local community responses around the World Heritage Sites in KwaZulu-Natal', *South African Geographical Journal*, vol. 91, no. 2, pp. 94-102.

Makino, M., Matsuda, H. & Sakurai, Y. 2009, 'Expanding fisheries co-management to ecosystem-based management: A case in the Shiretoko World Natural Heritage area, Japan', *Marine Policy*, vol. 33, no. 2, pp. 207-14.

Marin, A. & Berkes, F. 2010, 'Network approach for understanding small-scale fisheries governance: The case of the Chilean coastal co-management system', *Marine Policy*, vol. 34, no. 5, pp. 851-8.

Matsuda, H., Makino, M. & Sakurai, Y. 2009, 'Development of an adaptive marine ecosystem management and co-management plan at the Shiretoko World Natural Heritage Site', *Biological Conservation*, vol. 142, no. 9, pp. 1937-42.

Mbaiwa, J.E. 2011, 'Changes on traditional livelihood activities and lifestyles caused by tourism development in the Okavango Delta, Botswana', *Tourism Management*, vol. 32, no. 5, pp. 1050-60.

Mbaiwa, J.E. & Stronza, A.L. 2010, 'The effects of tourism development on rural livelihoods in the Okavango Delta, Botswana', *Journal of Sustainable Tourism*, vol. 18, no. 5, pp. 635-56.

McCay, B.J. & Acheson, J.M. 1987, 'The question of the commons: The culture and ecology of communal resources', *University of Arizona Press, Tucson*.

McConney, P., Mahon, R. & Pomeroy, R. 2007, 'Challenges Facing Coastal Resource Co-Management in the Caribbean', in D.R. Armitage, F. Berkes & N. Doubleday (eds), *Adaptive co-management: collaboration, learning, and multi-level governance*, University of British Columbia Press, Vancouver, pp. 105-24.

McConney, P., Pomeroy, R. & Mahon, R. 2003, 'Guidelines for coastal resource comanagement in the Caribbean: Communicating the concepts and conditions that favour success', *Caribbean Cosatal Co-management Guidelines Project. Caribbean Conservation Association, Barbados*.

Mercer, D. 2004, 'Tourism and resource management', in A.A. Lew, C.M. Hall & A.M. Williams (eds), *A Companion to Tourism*, Blackwell Publishing, London, pp. 462 -72.

Michael, J. 2011, 'Department of Environment and Conservation Update', *Kokoda Initiative Forum, March 8th 2011*, Kokoda Initiative, Rydges, Sydney.

Moeliono, M. 2008, 'Hands off, hands on: communities and the management of national parks in Indonesia', in N.S. Sodhi, G. Acciaioli, M. Erb & A.K.J. Tan (eds),

Biodiversity and human livelihoods in protected areas: case studies from the Malay Archipelago, Cambridge University Press, Cambridge, pp. 165-86.
Moorman, M.C., Peterson, N., Moore, S.E. & Donoso, P.J. 2013, 'Stakeholder Perspectives on Prospects for Co-Management of an Old-Growth Forest Watershed Near Valdivia, Chile', *Society & Natural Resources*, pp. 1-15.
Muke, J., Denham, T. & Genorupa, V. 2007, 'Nominating and managing a World Heritage Site in the highlands of Papua New Guinea', *World Archaeology*, vol. 39, no. 3, pp. 324-38.
Mumma, A. 2004, 'Community-Based Legal Systems and the Management of World Hertiage Sites', *Linking Universal and Local Values: Managing a Sustainable Future for World Heritage*, vol. 13, eds E. de Merode, R. Smeets & C. Westrik, UNESCO World Hertiage Centre Paris, The Netherlands, pp. 43-4.
Murphy, P. & Kalim, K. 2012, 'Kokoda Initiaitve', *Kokoda Initiative Forum, March 27th 2012*, Kokoda Initiative, Mecure Hotel, Sydney.
Natcher, D.C., Davis, S. & Hickey, C.G. 2005, 'Co-management: managing relationships, not resources', *Human Organization*, vol. 64, no. 3, pp. 240-50.
Nelson, H. 2007, 'Kokoda: Two National Histories', *The Journal of Pacific History*, vol. 42, no. 1, pp. 73-88.
Neuman, W.L. 2003, *Social research methods: Qualitative and quantitative approaches*, 5 edn, Allyn and Bacon, Boston, London.
Ngobese, P. 1994, 'What is it about Ecotourism that is Cause for Concern', *GEM Monitor*, vol. 1, no. 94, pp. 44-9.
Nicholas, L. 2007, 'Stakeholder perspectives on the Pitons Management Area in St. Lucia: Potential for sustainable tourism development', Ph.D. thesis, University of Florida, Florida, US.
Nicholas, L.N., Thapa, B. & Ko, Y.J. 2009, 'Residents' Perspectives of a World Heritage Site: The Pitons Management Area, St. Lucia', *Annals of Tourism Research*, vol. 36, no. 3, pp. 390-412.
Nkhata, B. & Breen, C. 2010, 'A Framework for Exploring Integrated Learning Systems for the Governance and Management of Public Protected Areas', *Environmental Management*, vol. 45, no. 2, pp. 403-13.
Nursey-Bray, M. 2006, 'Conflict to co-management: eating our words: towards socially just conservation of green turtles and dugongs in the Great Barrier Reef, Australia', James Cook University, Cairns.
Nursey-Bray, M. & Rist, P. 2008, 'Co-management and protected area management: Achieving effective management of a contested site, lessons from the Great Barrier Reef World Heritage Area (GBRWHA)', *Marine Policy*, vol. 33, no. 1, pp. 118-27.
Olsson, P. & Folke, C. 2001, 'Local ecological knowledge and institutional dynamics for ecosystem management: a study of Lake Racken watershed, Sweden', *Ecosystems*, vol. 4, no. 2, pp. 85-104.
Olsson, P., Folke, C. & Berkes, F. 2004, 'Adaptive co-management for building resilience in social-ecological systems', *Environmental Management*, vol. 34, no. 1, pp. 75-90.
Ostrom, E. 2002, *The drama of the commons*, National Academy Press, Washington DC.
Ostrom, E. 2005, 'Understanding the diversity of structured human interactions', in E. Ostrom (ed.), *Understanding institutional diversity*, Princeton University Press, Princeton, pp. 3-31.

Ostrom, E., Gardner, R. & Walker, J. 1994, *Rules, games, and common-pool resources*, University of Michigan Press, Ann Arbor.
Oviedo, G. & Puschkarsky, T. 2012, 'World Heritage and rights-based approaches to nature conservation', *International Journal of Heritage Studies*, vol. 18, no. 3, pp. 285-96.
Pannell, S. 2006, *Reconciling Nature and Culture in a Global Context?*, James Cook University, Townsville.
Papua New Guinea Government & Australian Government 2008, *Joint Understanding between PNG and Australia on the Kokoda Track and Owen Stanley Ranges* Department of Environment, Water, Heritage and the Arts, Canberra, viewed 27 June 2010.
Papua New Guinea Government & Australian Government 2010, *Second Joint Understanding 2010-2015* Department of Environment, Water, Heritage and the Arts, Canberra.
Patton, M.Q. 2002, *Qualitative Research and Evaluation Methods*, 3rd edn, Sage Publications, Thousand Oaks, CA.
Pedersen, A. 2002, *Managing Tourism at World Heritage Sites: A Practical Manual for World Heritage Site Managers*, UNESCO World Heritage Centre, Paris, viewed 12 June 2010 <whc.unesco.org/uploads/activities/documents/activity-113-2.pdf>.
Pedersen, A. 2007, 'The World Heritage Tourism Programme:Lessons Learned', in R. Bushell & P. Eagles (eds), *Tourism and protected areas: benefits beyond boundaries*, CABI, Oxfordshire, pp. 115-28.
Peters, J. 1998, 'Transforming the Integrated Conservation and Development Project (ICDP) Approach: Observations from the Ranomafana National Park Project, Madagascar', *Journal of Agricultural and Environmental Ethics*, vol. 11, no. 1, p. 17.
Phillips, A. 2002, *Management guidelines for IUCN category V protected areas: Protected landscapes/seascapes*, World Conservation Union.
Phillips, A. 2003, 'Turning ideas on their head. The New Paradigm For Protected Areas', vol. 20, pp. 8-32.
Pinkerton, E. 1989a, *Co-operative management of local fisheries*, University of British Columbia Press, Vancouver.
Pinkerton, E. 1989b, 'Introduction: Attaining better fisheries management through co-management-- prospects, problems and propositions. ', in E. Pinkerton (ed.), *Co-operative management of local fisheries*, University of British Columbia Press, Vancouver, pp. 3-33.
Pinkerton, E. 1998, 'Integrated management of a temperate montane forest ecosystem through wholistic foresty: a British Columbian examples', in F. Berkes & C. Folke (eds), *Linking social and ecological systems: management practices and social mechanisms for building resilience*, Cambridge University Press, Cambridge, pp. 363-89.
Pinkerton, E., Heaslip, R., Silver, J.J. & Furman, K. 2008, 'Finding "Space" for Comanagement of Forests within the Neoliberal Paradigm: Rights, Strategies, and Tools for Asserting a Local Agenda', *Human Ecology*, vol. 36, no. 3, pp. 343-55.
Plummer, R. 2009, 'The adaptive co-management process: An initial synthesis of representative models and influential variables', *Ecology and Society*, vol. 14, no. 2, p. 24.

Plummer, R. 2010, 'Social-ecological resilience and environmental education: Synopsis, application, implications', *Environmental Education Research*, vol. 16, no. 5, pp. 493-509.

Plummer, R. & Armitage, D. 2007a, 'Crossing Boundaries, Crossing Scales: The Evolution of Environment and Resource Co-Management', *Geography Compass*, vol. 1, no. 4, pp. 834-49.

Plummer, R. & Armitage, D. 2007b, 'A resilience-based framework for evaluating adaptive co-management: Linking ecology, economics and society in a complex world', *Ecological Economics*, vol. 61, no. 1, pp. 62-74.

Plummer, R. & Armitage, D.R. 2007c, 'Charting the New Territory of Adaptive Co-management: A Delphi Study', *Ecology and Society*, vol. 12, no. 2, pp. 10-23.

Plummer, R. & Fennell, D. 2006, 'Exploring co-management theory: Prospects for sociobiology and reciprocal altruism', *Journal of Environmental Management*, vol. 85, no. 4, pp. 944-55.

Plummer, R. & Fennell, D.A. 2009, 'Managing protected areas for sustainable tourism: prospects for adaptive co-management', *Journal of Sustainable Tourism*, vol. 17, no. 2, pp. 149-68.

Plummer, R. & Fitzgibbon, J. 2004, 'Co-management of natural resources: a proposed framework', *Environmental Management*, vol. 33, no. 6, pp. 876-85.

Plummer, R. & FitzGibbon, J. 2006, 'People matter: The importance of social capital in the co-management of natural resources', *Natural Resources Forum: A United Nations Sustainable Development Journal*, vol. 30, no. 1, pp. 51-62.

Plummer, R. & FitzGibbon, J. 2007, 'Connecting Adaptive Co-Management, Social Learning and Social Capital through Theory and Practice', in D.R. Armitage, F. Berkes & N. Doubleday (eds), *Adaptive co-management: collaboration, learning, and multi-level governance*, University of British Columbia Press, Vancouver, pp. 38-61.

Pomeroy, R.S. 1995, 'Community-based and co-management institutions for sustainable coastal fisheries management in Southeast Asia', *Ocean & Coastal Management*, vol. 27, no. 3, pp. 143-62.

Pomeroy, R.S. 1998, 'A process for community-based fisheries co-management', *Naga, The ICLARM Quarterly*, vol. 21, no. 1, pp. 71-6.

Pomeroy, R.S. & Berkes, F. 1997, 'Two to tango: The role of government in fisheries co-management', *Marine Policy*, vol. 21, no. 5, pp. 465-80.

Pomeroy, R.S., McConney, P. & Mahon, R. 2004, 'Comparative analysis of coastal resource co-management in the Caribbean', *Ocean & Coastal Management*, vol. 47, no. 9-10, pp. 429-47.

PPT Partnerships 2004, *Sheet NO8 Policy Instruments Supporting Pro Poor Tourism*, viewed 10 December 2012 <http://www.propoortourism.org.uk/ppt_pubs_infosheets.htm>.

Pretty, J. & Ward, H. 2001, 'Social capital and the environment', *World Development*, vol. 29, no. 2, pp. 209-27.

Rakic, T. & Chambers, D. 2008, 'World Heritage: Exploring the tension between the national and the 'universal'', *Journal of Heritage Tourism*, vol. 2, no. 3, pp. 144-55.

Rao, K. 2010, 'A new paradigm for the identification, nomination and inscription of properties on the World Heritage List', *International Journal of Heritage Studies*, vol. 16, no. 3, pp. 161-72.

Raymond, C.M., Fazey, I., Reed, M.S., Stringer, L.C., Robinson, G.M. & Evely, A.C. 2010, 'Integrating local and scientific knowledge for environmental

management', *Journal of Environmental Management*, vol. 91, no. 8, pp. 1766-77.
Reed, M.G. 1999, 'Collaborative tourism planning as adaptive experiments in emergent tourism settings', *Journal of Sustainable Tourism*, vol. 7, no. 3-4, pp. 331-55.
Reid, H., Fig, D., Magome, H. & Leader-Williams, N. 2004, 'Co-management of contractual national parks in South Africa: Lessons from Australia', *Conservation and Society*, vol. 2, no. 2, p. 377.
Reid, W.V. 2006, *Bridging scales and knowledge systems: concepts and applications in ecosystem assessment*, Island Press, Washington DC.
Robards, M.D. & Lovecraft, A.L. 2010, 'Evaluating Comanagement for Social-Ecological Fit: Indigenous Priorities and Agency Mandates for Pacific Walrus', *Policy Studies Journal*, vol. 38, no. 2, pp. 257-79.
Robson, C. 2011, *Real world research*, 3 edn, John Wiley & Sons Ltd, Chichester, UK.
Rodriguez-Dowdell, N., Enriquez-Andrade, R. & Cardenas-Torres, N. 2007, 'Property rights-based management: whale shark ecotourism in Bahia de los Angeles, Mexico', *Fisheries Research*, vol. 84, no. 1, pp. 119-27.
Ross, A., Innes, J., George, M. & Gorman, K. 2004, *Traditional Owner Aspirations Towards Cooperative Management of the Great Barrier Reef World Heritage Area: Community case studies*, CRC Reef Research Centre, Townsville.
Rossler, M. 2004, 'Managing World Heritage Cultural Landscapes and Sacred Sites', *Linking Universal and Local Values: Managing a Sustainable Future for World Heritage*, vol. 13, eds E. de Merode, R. Smeets & C. Westrik, UNESCO World Hertiage Centre Paris, The Netherlands, pp. 45-7.
Rossler, M. 2006, 'World Heritage cultural landscapes: A UNESCO flagship programme 1992 - 2006', *Landscape Research*, vol. 31, no. 4, pp. 333-53.
Ruitenbeek, H.J. & Cartier, C.M. 2001, *The invisible wand: adaptive co-management as an emergent strategy in complex bio-economic systems*, vol. 34, Center for International Forestry Research Bogor, Indonesia, Bogor, Indonesia.
Scheyvens, R. & Russell, M. 2012, 'Tourism, land tenure and poverty alleviation in Fiji', *Tourism Geographies*, vol. 14, no. 1, pp. 1-25.
Schultz, L., Duit, A. & Folke, C. 2010, 'Participation, Adaptive Co-management, and Management Performance in the World Network of Biosphere Reserves', *World Development*, vol. 39, no. 4, pp. 662-71.
Schultz, L. & Lundholm, C. 2010, 'Learning for resilience? Exploring learning opportunities in Biosphere Reserves', *Environmental Education Research*, vol. 16, no. 5, pp. 645-63.
Shackley, M. 1998, 'Conclusions: Visitor Management at Cultural World Heritage Sites', in M. Shackley (ed.), *Visitor Management: Case Studies from World Heritage Sites. Oxford: Butterworth-Heinemann*, Butterworth-Heinemann, Oxford, pp. 194-205.
Shackley, M. 2005, 'Managing the Cedars of Lebanon: Botanical Gardens or Living Forests?', in D. Harrison & M. Hitchcock (eds), *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Books, London, pp. 137-46.
Silverman, D. 2010, *Doing qualitative research* 3rd edn, Sage Publications, Los Angeles.
Simons, H. 2009, *Case study research in practice*, Sage Publications, Los Angeles.
Singleton, S. 2000, 'Co-operation or capture? The paradox of co-management and community participation in natural resource management and environmental policy-making', *Environmental Politics*, vol. 9, no. 2, pp. 1-21.

Smith, A. 2011, 'East Rennell World Heritage Site: misunderstandings, inconsistencies and opportunities in the implementation of the World Heritage Convention in the Pacific Islands', *International Journal of Heritage Studies*, vol. 17, no. 6, pp. 592-607.

Sneed, P. 1997, 'National Parklands and Northern Homelands: Towards co-management of National Parks in Alaska and the Yukon', in S. Stevens (ed.), *Conservation through cultural survival: Indigenous peoples and protected areas*, Island Press, Washington DC, pp. 135-54.

Soule, M.E. 1985, 'What is conservation biology?', *BioScience*, vol. 35, no. 11, pp. 727-34.

Spaeder, J.J. & Feit, H.A. 2005, 'Co-management and Indigenous Communities: Barriers and Bridges to Decentralized Resource Management: Introduction', *Anthropologica*, vol. 47, no. 2, pp. 147-54.

Stake, R.E. 1995, *The art of case study research*, Sage Publications, Inc, Thousand Oaks, CA.

Stake, R.E. 2000, 'Case Studies', in N.K. Denzin & Y.S. Lincoln (eds), *Handbook of qualitative research*, Sage Publications, Thousand Oaks, CA, p. 2nd ed.

Stake, R.E. 2005, 'Qualitative case studies', in N.K. Denzin & Y.S. Lincoln (eds), *The Sage handbook of qualitative research* vol. 3rd ed., Sage Publications, Thousand Oaks, CA, pp. 443-66.

Stephens, T. 2008, 'Customary Tenure in Papua New Guinea: Vehicle or Roadblock for Development?', *Sydney Law School Research Paper*, no. 08/90.

Stevens, S. 1997a, *Conservation through cultural survival: Indigenous peoples and protected areas*, Island Press, Washington DC.

Stevens, S. 1997b, 'Consultation, Co-management and Conflict in Sagarmatha (Mount Everest) National Park, Nepal', in S. Stevens (ed.), *Conservation through cultural survival: Indigenous peoples and protected areas*, Island Press, Washington DC, pp. 62-92.

Stevens, S. 1997c, 'The legacy of Yellowstone', in S. Stevens (ed.), *Conservation Through Cultural Survival*, Island Press, Washington DC, pp. 13-32.

Stevenson, M. 2006, 'The Possibility of Difference: Rethinking Co-management', *Human Organization*, vol. 65, no. 2, pp. 167-80.

Strasser, P. 2002, ''Putting reform into action' - thirty years of the world heritage convention: how to reform a convention without changing its regulations', *International journal of cultural property*, vol. 11, no. 02, pp. 215-66.

Su, M.M. & Wall, G. 2012, 'Global-local relationships and governance issues at the Great Wall World Heritage Site, China', *Journal of Sustainable Tourism*, vol. 20, no. 8, pp. 1067-86.

Sullivan, S. 2004, 'Local Involvement and Traditional Practices in the World Heritage System', *Linking Universal and Local Values: Managing a Sustainable Future for World Heritage*, vol. 13, eds E. de Merode, R. Smeets & C. Westrik, UNESCO World Hertiage Centre Paris, The Netherlands, pp. 49-55.

Telesetsky, A. 2001, 'Graun bilong mipela na mipela no tromweim: The viability of international conservation easements to protect Papua New Guinea's declining biodiversity', *Georgetown International Environmental Law Review*, vol. 13, no. 3, p. 735.

The Kokoda Track Foundation 2013, *Mission Statement*, The Kokoda Track Foundation, viewed 20 September 2011 <http://www.kokodatrackfoundation.org/mission-statement.aspx>.

Thom, B. & Washbrook, K. 1997, 'Co-management, negotiation, litigation: Questions of power in traditional use studies', *Society for Applied Anthropology*, Seattle.

Tornell, A. & Velasco, A. 1992, 'The tragedy of the commons and economic growth: why does capital flow from poor to rich countries?', *Journal of Political Economy*, vol. 100, no. 6, pp. 1208-31.

Trau, A.M. 2012, 'Beyond Pro-Poor Tourism: (Re)Interpreting Tourism-Based Approaches to Poverty Alleviation in Vanuatu', *Tourism Planning & Development*, vol. 9, no. 2, pp. 149-64.

Trau, A.M., Ballard, C. & Wilson, M. 2012, 'Bafa Zon: localising World Heritage at Chief Roi Mata's Domain, Vanuatu', *International Journal of Heritage Studies*, pp. 1-18.

Turner, J.H. 2003, *The Structure of Sociological Theory*, Seventh edn, Wadsworth/Thomson Learning, Belmont, CA.

UNESCO 2004, *Action Plan World Heritage – Pacific 2009 Programme*, Tongariro National Park.

UNESCO 2007, *World Heritage Committee Thirty-first Session*, UNESCO, Christchurch.

UNESCO 2009, *Papua New Guinea - UNESCO Country Programming Document, 2008 - 2013*, UNESCO Cluster Office for the Pacific States, Apia.

UNESCO 2010a, *Intangible Cultural Heritage: Frequently Asked Questions*, UNESCO, viewed 14 August 2010 <http://www.unesco.org/culture/ich/index.php?lg=en&pg=00021>.

UNESCO 2010b, *Pacific Islands World Heritage Workshop 2009*, United Nations, viewed 20 September 2010 <http://whc.unesco.org/en/events/609/>.

UNESCO 2010c, *Pacific Islands World Heritage Workshop regarding capacity-building for heritage site management* United Nations, viewed 3 September 2010 <http://whc.unesco.org/en/events/496/>.

UNESCO 2010d, *Pacific World Heritage Action Plan 2010-2015*, Cairns and Maupiti.

UNESCO 2010e, *Thematic Framework for World Cultural Heritage in the Pacific*, United Nations, viewed 19 September 2010 <http://whc.unesco.org/en/activities/5/>.

UNESCO 2010f, *UNESCO Operational Guidelines for the Implementation of the World Heritage Convention*, United Nations, viewed 9 April 2010 <http://whc.unesco.org/en/guidelines>.

UNESCO 2010g, *World Heritage List: Chief Roi Mata's Domain*, United Nations, viewed 20 September 2010 <http://whc.unesco.org/en/list/1280>.

UNESCO 2010h, *World Heritage List: Kuk Early Agricultural Site*, United Nations, viewed 20 September 2010 <http://whc.unesco.org/en/list/887>.

UNESCO 2010i, *World Heritage List: Phoenix Islands Protected Area*, United Nations, viewed 20 September 2010 <http://whc.unesco.org/en/list/1325>.

UNESCO 2010j, *World Heritage Pacific 2009 Programme*, United Nations, viewed 20 June 2010 <http://whc.unesco.org/en/activities/5/>.

UNESCO 2011a, *Man and the Biosphere Programme*, UNESCO, viewed 11 October 2011, <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/man-and-biosphere-programme/>.

UNESCO 2011b, *UNESCO The World Heritage Convention*, United Nations, viewed 24 July 2010 <http://whc.unesco.org/en/conventiontext/>.

UNESCO 2013a, *Global Strategy*, United Nations, 15 May 2011, <http://whc.unesco.org/en/globalstrategy/>.

UNESCO 2013b, *The World Heritage List*, viewed 4 May 2013 <http://whc.unesco.org/en/list>.
UNESCO 2013c, Australia Funds-in-Trust Agreement created to support World Heritage activites, United Nations, 4 November 2012 <http://whc.unesco.org/en/news/464/>
UNESCO, WHC, ICCROM, ICOMOS & IUCN 2011, *Preparing World Heritage Nominations (First Edition 2010)*, Paris.
Veal, A.J. 2006, *Research Methods for Leisure and Tourism*, Third edn, Pearson Education Limited, Essex.
Veal, A.J. 2010, *Research methods for leisure and tourism: a practical guide*, 4th edn, Pearson Education Limited, Essex.
Vodouhe, F.G., Coulibaly, O., Adegbidi, A. & Sinsin, B. 2010, 'Community perception of biodiversity conservation within protected areas in Benin', *Forest Policy and Economics*, vol. 12, no. 7, pp. 505-12.
Vogler, J. 2000, *The global commons*, Wiley & Sons, Liverpool.
Wall, G. & Black, H. 2005, 'Global Heritage and Local Problems: Some Examples from Indonesia', in D. Harrison & M. Hitchcock (eds), *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Books, London, pp. 156-60.
Walters, C. 1986, *Adaptive management of renewable resources*, McMilan Publishing Company, New York.
Walton, J. 1992, 'Making the theoretical case', in C.C. Ragin & H.S. Becker (eds), *What's in a Case? Exploring the Foundations of Social Inquiry*, Cambridge University Press, Cambridge, pp. 121-37.
Wearing, S., Grabowski, S., Chatterton, P. & Ponting, J. 2009, 'Participatory planning for eco-trekking on a potential World Heritage site: the communities of the kokoda track', *Pacific Economic Bulletin*, vol. 24, no. 3, pp. 101-17.
Wearing, S. & Huyskens, M. 2001, 'Moving on from joint management policy regimes in Australian national parks', *Current Issues in Tourism*, vol. 4, no. 2-4, pp. 182-209.
Wearing, S. & McDonald, M. 2002, 'The development of community-based tourism: Re-thinking the relationship between tour operators and development agents as intermediaries in rural and isolated area communities', *Journal of Sustainable Tourism*, vol. 10, no. 3, pp. 191-206.
Wearing, S.L., Wearing, M. & McDonald, M. 2010, 'Understanding local power and interactional processes in sustainable tourism: Exploring village-tour operator relations on the Kokoda Track, Papua New Guinea', *Journal of Sustainable Tourism*, vol. 18, no. 1, pp. 61-76.
Ween, G.B. 2012, 'World Heritage and Indigenous rights: Norwegian examples', *International Journal of Heritage Studies*, vol. 18, no. 3, pp. 257-70.
Weiner, J.F. & Glaskin, K. 2007, 'Customary land tenure and registration in Australia and Papua New Guinea: Anthropological perspectives', in J.F. Weiner & K. Glaskin (eds), *Customary land tenure and registration in Australia and Papua New Guinea: Anthropological perspectives*, vol. 3, ANU E Press, Canberra, pp. 1-14.
Wells, M., Brandon, K. & Hannah, L. 1992, *People and parks: linking protected area management with local communities*, The International Bank for Reconstruction and Development/The World Bank, Washington DC.
Wenger, E. 1998, 'Communities of practice: Learning as a social system', *Systems thinker*, vol. 9, no. 5, pp. 1-5.

West, P. & Brechin, S. 1991, *Resident peoples and national parks: social dilemmas and strategies in international conservation*, University of Arizona Press Tucson.
West, P., Igoe, J. & Brockington, D. 2006, 'Parks and peoples: the social impact of protected areas', *Annual Review Anthropology*, vol. 35, pp. 251-77.
Williams, K. 2005, 'The Meaning and Effectiveness of World Heritage Designation in the USA', in D. Harrison & M. Hitchcock (eds), *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Books, London, pp. 132-6.
Willis, K. 2006, 'Analysing qualitative data', in M. Walter (ed.), *Social research methods: an Austrlaian perspective*, Oxford University Press, South Melbourne, pp. 257-79.
Wilson, M., Ballard, C. & Kalotiti, D. 2007, 'Chief Roi Mata's Domain Challenges facing a World Heritage-nominated property in Vanuatu', paper presented to the *Cultural Heritage Management in the Pacific*, Cairns, 21 July 2007.
Winter, T. 2005, 'Landscape, Memory and Heritage: New Year Celebrations at Angkor, Cambodia', in D. Harrison & M. Hitchcock (eds), *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Books, London, pp. 50-65.
Wollenberg, E., Edmunds, D. & Buck, L. 2000, 'Using scenarios to make decisions about the future: anticipatory learning for the adaptive co-management of community forests', *Landscape and Urban Planning*, vol. 47, no. 1-2, pp. 65-77.
World Heritage Committee 1994, *Report of the Expert Meeting on the "Global Strategy" and thematic studies for a representative World Heritage List* Phuket, Thailand.
Yin, R. 2003, *Case Study Research: Designs and Methods*, Third edn, Sage Publications, Inc, Thousand Oaks.
Yin, R.K. 2009, *Case study research: Design and methods*, vol. 4th ed. Vol. 5, Sage Publications, Los Angeles.
Zachrisson, A. 2008, 'Who should manage protected areas in the Swedish mountain region? A survey approach to co-management', *Journal of Environmental Management*, vol. 87, no. 1, pp. 154-64.
Zurba, M. 2009, 'Bringing local synthesis into governance and management systems: The Girringun TUMRA case in Northern Queensland, Australia', *Journal of the Royal Society of New Zealand*, vol. 39, no. 4, pp. 179-82.
Zurba, M. 2010, 'How well is co-management working? Perspectives, partnerships and power sharing along the way to an Indigenous Protected Area on Girringun country, ' University of Manitoba (Canada), Canada.