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REASSERTING THE LOCAL IN THE GLOBAL

LOCAL LIVELIHOODS AND SUSTAINABLE DEVELOPMENT IN THE PROPOSED EAST RENNELL WORLD HERITAGE SITE, SOLOMON ISLANDS

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ABSTRACT

This thesis assesses the relationships between the sustainable development approach to integrating environmental and developmental concerns, and that approach suggested by the concept of sustainable livelihoods. In the context of the East Rennell World Heritage Project in Solomon Islands, the nature of sustainable development as it is operationalised at the local level, and the reality of people's livelihoods within the boundaries of that project, are assessed to determine where sustainable development meets livelihoods to both support and enhance them, and the implications which a sustainable livelihoods approach has for sustainable development.

Over the last fifteen years the concept of sustainable development has been promoted at the global level as a means by which environmental integrity may be maintained, and at the same time allow for the continued development of human economic and social systems to improve the welfare of poor people. Arising out of the twin concerns that development was not meeting its primary goal of alleviating poverty, and at the same time was placing environmental systems in jeopardy, the concept of sustainable development is now a central theme within global development discourse.

Alternatively, the concept of sustainable livelihoods has been presented as a 'new analysis' of the reality of the lives of local people and the problems they encounter as they attempt to construct viable livelihoods for themselves, and represents an alternative strategy for integrating environmental and developmental concerns at the local level. The rationale for using such an approach to environment and development is that only by ensuring that all people have access to an adequate and secure livelihood will further goals of sustainability be able to be obtained.

This thesis presents the results of research undertaken in Solomon Islands over a three month period in 1995. The research is presented as two village case studies incorporating the results of Participatory Rural Appraisal surveys undertaken at Tevaitahe and Niupani villages in the proposed East Rennell World Heritage Site.

The general conclusion reached is that although sustainable development attempts to assist local people in conserving their resources and develop income generating business based on ecotourism, the nature of this sustainable development to a certain extent precludes the achievement of sustainable livelihoods.The suggestion is given, therefore, that the sustainable livelihoods infer an alternative approach to development.

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LIST OF ACRONYMS

APEC	Asia-Pacific Economic Cooperation Organisation
GEF	Global Environmental Facility
GNP	Gross National Product
IUCN	International Union for the Conservation of Nature
MFAT	Ministry of Foreign Affairs [New Zealand]
NEMS	National Environmental Management Strategy
NGO	Non-Governmental Organisation
NZODA	New Zealand Overseas Development Assisstance Programme
PRA	Participatory Rural Appraisal
RRA	Rapid Rural Appraisal
SDA	Seventh Day Adventist
SICHE	Solomon Islands College of Higher Education
SIG	Solomon Islands Government
SINURP Pati	Solomon Islands National Unity and Reconciliation
SOLFRIP	Solomon Islands Forest Resource Inventory Project
SPREP	South Pacific Regional Environment Programme
SSEC	South Seas Evangelical Church
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VRMP	Village Resource Management Plan

WCED	World Commission on Environment and Development
WCS	World Conservation Strategy
WHAC	World Heritage Advisory Committee
WWF	World Wildlife Fund (World Wide Fund For Nature)

CHAPTER ONE

INTRODUCTION

BACKGROUND

The concept of sustainable development is one which has dominated global development discourse for the last decade. Although the origins of sustainable development can be traced back further, the appearance in 1987 of 'Our Common Future', the report of the World Commission on Environment and Development (WCED,1987), signaled the integration of sustainability into mainstream development policy and practice, as both a normative goal and a process defining principle. At the completion of its three year investigation, the WCED (which is commonly known as 'the Brundtland Commission'), concluded that:

> ...it is possible to build a future that is prosperous, just and secure. But realizing this possibility depends on all countries adopting the objective of sustainable development as the overriding goal and test of national policy and international cooperation. Such development can be defined simply as an approach to progress which meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED 1987, p363).

What followed was a list of eight points necessary for the attainment of sustainable development. These prescriptions not only highlighted the impacts of poverty on the environment, but also hinted at a systemic dysfunction of the global economy which placed the poor at a disadvantage relative to the rich at the local, national and global levels.

In essence, the WCED recognised that not only were environment and development inextricably linked, but also that the possibility of sustaining the development process environmentally, socially and economically was dependent upon the form which that development took.

Although there has been a widespread acceptance, among theoreticians, policy makers and development practitioners alike, of the principles of sustainable development, there is some contention amongst these groups as to the exact nature of the concept as both a theoretical construct and practical policy framework. Because of the vague nature of the definition of sustainable development presented by the WCED, it is able to accommodate a broad range of competing opinions as to its conceptualisation and implementation, and hence has come to gain a broad base of support.

As David Pearce suggests, the arguments surrounding sustainability can be seen to form a spectrum of opinions as to how to theorize and operationalize the concept. These range from the technocentric and weak sustainability position, which advocates the use of the free market as the key economic and environmental regulator, to the ecocentric 'deep ecology' interpretation which argues for an 'extreme preservationist position' overriding all other economic, social and political concerns. (Pearce,1993:18-19).

Irrespective, however, of the ideological arguments as to the nature of sustainability as an environmental concept, the central focus of development remains an attempt to implement strategies to enable a change in the circumstances of human beings at specific spatial scales. Much development strategy in the period after World War Two, and particularly that involving national and international policy, has focused on increasing the productive capacity of national economies and their integration into the global economy. This has seen the promotion of national (productive) development concerns over and above the concerns of individuals, the over-arching argument for which has been that increasing national output is for the good of all citizens. Up until the 1970s, then, the idea, and practice, of development has been almost wholly synonymous with the concept of economic growth.

The result, however, of this form of development has been increasing spatial differentiation in well-being at local, national and global scales, which in many cases causes and/or exacerbates environmental degradation. It is now commonly, although not generally, accepted that not only is poverty in part caused by environmental degradation, but that that degradation is also caused by poverty. In this way poverty and the environment become causally linked, as do development and the environment.

The gradual acceptance of environmental principles by development institutions has been accompanied by a realisation that development itself was not attaining the goals of reducing poverty and meeting basic needs. Many development institutions and practitioners called for a change in the focus of development process, and some authors, such as Robert chambers (1983,1993,1995), called for a complete reorientation of the development process away from the standard 'top-down' approach towards more participatory, empowering development from the 'bottom-up'. The central argument of this approach, and particularly that espoused by Chambers, is that development theory and practice have tended to be based in the urban cores of the Western industrialised countries, and therefore bears the imprint of their priorities, rather than the priorities of those of who development is supposed to assist, particularly the rural poor in the Third World (Chambers, 1983,1993,1995). In this respect the crisis of environment in development has been accompanied by a crisis of development within development.

There has, then, been a realisation by some theorists and practitioners that sustainable development should not only be concerned with the environmental impacts of development, but also the efficacy of the development model itself in achieving the aim of meeting basic needs, as is central to the definition of sustainable development cited above. One

alternative approach, suggested by a number of authors, is that of sustainable livelihoods, whereby the focus of development is on securing the livelihoods of rural people in developing countries.

AIMS OF THE THESIS

The central concern of this thesis is the way in which global sustainable development theory is implemented on the ground, the livelihood realities of people in the local context of that development, and the relationships between the two. In this respect the thesis is concerned with three sets of relationships. The first concerns the dual theoretical constructs of sustainable development and livelihoods, and more precisely the implications which the theory of sustainable livelihoods has for the theory of sustainable development. In approaching this relationship the thesis is essentially asking the question of how the concept of sustainable livelihoods fits within a broader sustainable development paradigm.

The second set of relationships concerns the implications which the reality of peoples' livelihoods at the local level has for the practice of sustainable development. In other words, how does the practice of sustainable development at a grassroots level impact upon the livelihoods of local people, and does the goal of sustainable livelihoods imply a different approach to development?

The third set of relationships concerns the implications which the reality of people's livelihoods has for the general theory of sustainable development at the global level. Alternatively, if sustainable livelihoods are a basic goal at the local level, does this imply a reorientation of global policy in order to support this goal?

This thesis, then, is essentially about global-local relationships. The central argument is that part of the problem of sustainability is the

increasing globalisation of economies, environments and political systems. This process, at the same time, denigrates the lives of local communities and generalises the problems which they face, constructs global structures which work to the detriment of local livelihoods, and ensures that these remain in place. In this respect, the thesis attempts to show that strategies to formulate local level action plans are in many ways fruitless without a reorientation of priorities at the global level.

RESEARCH CONTEXT: LIVELIHOODS AS AN INTEGRATING CONCEPT

Redclift (1987) suggests that the very process of global development works to undermine the ability of local people in rural areas of developing countries to provide and sustain for themselves a viable livelihood. The key cause lies not within the developing countries themselves, but with the global economic system as a whole, and the impacts it has both on the global environment, and people living within that environment, particularly at the local level in the Third World.

The concept of sustainable livelihoods has been given scant attention in the development literature, and it is only recently that it has been considered as a viable concept for achieving developmental and environmental goals at the local level. The term appeared in the Food 2000 report to the WCED in 1987, and was suggested as an integrating concept for putting poor people first as a prerequisite for any long term strategy of development and environmental conservation (Food 2000; 1987, p3). This report defined a livelihood as simply: 'adequate stocks and supplies of food and cash to meet basic needs' (ibid, p3).

Perhaps the most vocal (and prolific) advocate of livelihoods in the development literature has been Robert Chambers, who has integrated

the concept within his last-first thesis. Chambers provides both the theoretical basis of livelihoods as a development concept (1983, 1992, 1993), and also an argument for the practical implementation of livelihoods as the basic principle for sustainability (1987, 1988, 1992, 1995). The emphasis within Chambers' work is on the problem of development as conceptualised, designed, and implemented by first world development theoreticians and practitioners, with little recognition for the reality of people who are the focus of development in the first place.

The concept of sustainable livelihoods as a basic principle within sustainable development, has been suggested as a means by which developmental and environmental concerns at the local level may be integrated to achieve sustainable development (Food 2000,1987; Chambers,1987, 1988; Chambers and Conway,1992). The fact in many parts of the Third World (and indeed the world as a whole) of increasing population, the concentration of ownership of resources, and the increasing pressures on those resources from rich and poor alike, provide both a moral and practical impetus for making the provision of secure and sustainable livelihoods a goal of fundamental importance. These processes typically impact upon people at the local level, particularly the poor, and are evident in increasing poverty and environmental degradation. Ensuring that people have access to a secure livelihood as a basic minimum not only provides a stable platform from which to approach other problem areas such as environment, population and economic development, but may also reduces the need for separate policy prescriptions with which to tackle these problem areas.

Authors such as Woodgate have analysed local livelihood systems and environmental knowledge and their relationship to national agricultural policy (1994,132-170), and Conroy and Litvinoff (1988) have brought together a series of case studies of small local level development projects with sustainable livelihoods as a central theme. The case studies

presented are primarily concerned with projects undertaken by NGOs (albeit often with global institutional funding) in various parts of the third world. As yet, however, there has been little examination of the relationships between sustainable development as implemented by an international development organisation, and the livelihoods of people involved. It is this gap which this thesis intends to go some way towards filling.

RESEARCH FOCUS

The focus of this research has been to assess the relationships between a sustainable development project as implemented by a governmental aid/development organisation, and the livelihoods of the people for whom the project is supposed to be of benefit.

To achieve this an analysis was undertaken of the World Heritage Site/Ecotourism project on Rennell Island in the Solomon Islands, implemented by the Solomon Islands Government (SIG), and funded and assisted by the New Zealand Overseas Development Assistance Programme (NZODA). Cojointly the livelihood strategies of the local people were assessed, and from these two analyses it was possible to determine how the livelihoods were being, and would be affected by the development project, and ultimately, what the implications of livelihoods are for the practice of sustainable development.

STRUCTURE OF THE THESIS

To present the findings of this research, the thesis has been divided into two parts; the first dealing with the theoretical relationships between sustainable development and livelihoods, and the second with the

practical relationships between these two concepts as they appear in reality (see Figure 1.1: Individual chapters represented by shaded areas).

Part One of the thesis concerns the relationship between the theoretical formulations of sustainable development and livelihoods. Chapters two and three trace the evolution as theoretical constructs of sustainable development and livelihoods respectively. The emphasis here is on an explanation of the importance of the historical basis of these two ideas, how they have come to be important concepts in the global development and environment debate, and the importance of the theoretical relationship between them.

Chapter Four provides a link between the two parts of the thesis, outlining the area where the fieldwork was undertaken and the methodology used to gather information, An introduction is given to the local context of the research, introducing the Pacific regional context of development, the Solomon Islands and East Rennell as the site of the World Heritage project. The origins of Participatory Rural Appraisal (PRA) as a research technique, and an explanation of the menu of methods which were used for this research are then given.

Part Two of the thesis attempts to answer the question of how the practice of sustainability and the reality of livelihoods relate to each other at a grassroots and practical level. Chapter five deals with the development/conservation project itself and how this can be seen as a manifestation of global sustainable development theory, and Chapter six presents an analysis of livelihood strategies employed by local people in the context of the World Heritage project at East Rennell. Together, these two chapters present the findings of research undertaken in Solomon Islands in October, November and December 1995, and represent the local context of the practical interpretation of global sustainable development theory.

Finally, chapters seven and eight provide general conclusions concerning sustainable development and sustainable livelihoods. Chapter seven presents conclusions as to how sustainable development supports livelihoods at the local level, and the implications that livelihoods have for the practice of sustainable development. Chapter eight concludes the thesis by showing that by attempting to provide sustainable livelihoods for people at the local level, we necessarily imply a reorientation of priorities at the global level.

CHAPTER ONE
INTRODUCTION

PART ONE THEORETICAL

CHAPTER TWO:
THEORY AND EVOLUTION OF
SUSTAINABLE
DEVELOPMENT:
-Developmentalism
-Environmentalism

CHAPTER THREE:
CONCEPT OF LIVELIHOODS:
-Basic needs
-Social sustainability
-Participation and
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COMPLEMENTARY
OR IN CONFLICT?

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SUSTAINABLE DEVELOPMENT AND LIVELIHOODS:
Relationships, implications and conclusions

Figure 1.1: Thesis structure

CHAPTER TWO

SUSTAINABLE DEVELOPMENT

INTRODUCTION

During the 1980s and early 1990s the concept of sustainable development has emerged as the dominant theme for development discourse at the global level. Concerns for the state of the environment, which emerged during political and social movements in the 1960s, and the acceptance that development processes were not working to improve the situation of the majority of the world's poor, have led, at a theoretical level at least, to a reorientation of global development goals.

Although a substantial number of development theoreticians and practitioners recognize and accept the basic principles of the model presented by sustainable development, there continues to be much contention as to the precise nature of that model, and the means by which it may be operationalized. As Pearce and Warford (1993:41) contend, the concept was, in 1987, intended more as a 'convenient phrase for rallying support than an agent for forcing environmental change'. The result is that a decade after the World Commission on Environment and Development with *Our Common Future* (WCED,1987) placed sustainable development firmly in the global spotlight, there continues to be no widely held consensus of meaning and methods (Lele,1991:607).

The widespread acceptance of sustainability principles however, does represent a perceptual shift in the meaning of development, and its place within wider social, economic and ecological processes. In the mid 1990s sustainable development presents more than a 'convenient phrase'; rather it has come to represent a set of defining principles for human action and interaction within the global environment. The fact of this widespread acceptance, however, is in part attributable to the convenience of the

phrase, and the vagueness of meanings attached to it (Lele,1991:607). At the same time it is able to accomodate a broad spectrum of intellectual positions, it provides common ground for conflicting positions, and it optimistically suggests that there is hope for the future. It may also, however, prove to be nothing more than an intellectual oxymoron (ibid:608).

SUSTAINABLE DEVELOPMENT: CONCEPTUAL DECONSTRUCTION

The nature of the arguments surrounding the concept of sustainable development can be seen to reflect a fundamental tension between the environmentalist and developmentalist theoretical traditions from which the concept evolved. As David Pepper suggests, all human actions, and the ideas which inform them, can be seen to be the product of particular historical contexts which, when investigated, will provide valuable insights to our present situation (Pepper,1984:3). In this respect sustainable development represents the merger of two previously opposing streams of thought. To understand how sustainable development evolved and came to prominence in the latter stages of the twentieth century, it is necessary to deconstruct the concept and analyse these two traditions.

DEVELOPMENTALISM

The Meaning of 'Development'

Development is one of those many words in the English language which, at the same time, say so much but mean very little: 'development means different things to different people' (Todaro,1994:14). Definitions of development range from the very simple, such as Robert Chambers' 'good change' (1995:vi), to the more complex and abstract, such as Goulet's assertion that 'development' comprises only one part of broader historical change processes which interact to impinge upon, and indeed define the course of human existence (Goulet,1971:13). Lee, more simply, defines

development as 'a process of becoming and a potential state of being' (Lee,1994:128). Following this, Scott interprets development as:

> ...both a means to an end and an end itself ...[which] implies different means and different ends in particular historical and geographical contexts (Scott,1995:33).

A broad, and somewhat vague definition of development then, is that it involves a transformation, by way of a varied set of processes to reach a more desirable state. Although this provides a statement as to the nature of development, it is one which neglects the critical importance of the actual changes which take place, and the impacts of these changes on the objects of the development process. More fundamentally, this definition denies the fact that both the nature of the development process, and the desirable state which is its goal, are dependent upon the value judgements of those who define, initiate and control them.

In this respect the meaning of development is open to a wide range of interpretations, and also suggests a divergence between varying definitions at a thoeretical level, and those interpretations which are implemented at a practical level. Practical interpretations of development, then, will have as much to do with the hegemony of a particular ideology, as it will with a consensus of opinion between competing viewpoints. Goulet, who suggests that development is part of broader historical change processes, identifies two sets of processes which work to determine the relative effectiveness of development at different points in space and time. The first set of processes concern production, mastery over nature, rational organisation and technological efficiency, and the second set concern structures of power and ideology (Goulet,1971:14). Goulet suggests that control over the second set of processes will determine the outcomes and effectiveness of the initiation of the first set. In other words, a country's ability to benefit from the development implied by initiation and control of productive, extractive, organisational and technological processes, will in large part be dependent upon their relative position in power structures which operate at the global level.

The practical meaning of development as a process and desirable state, can therefore be seen to be the product of dominant powers and ideologies and the value systems which they hold. As Mehmet suggests, 'development' represents nothing more than the transfer of Western, Eurocentric and industrial values and ideologies to the Third World (Mehmet,1995:8-17). The 'paradigm' which has informed the development process in the industrialised countries, has therefore been transplanted to the Third World by a process of global development initiated in the First World. There is little regard, however, for the efficacy of this model of development for points in space and time which differ fundamentally from those in which it originated.

The Dominant Development 'Paradigm'

Thomas Kuhn defined a paradigm as 'universally recognised scientific achievements that for a time provide model problems and solutions for a community of practitioners' (Kuhn,1962:x). In making this statement Kuhn was refering to the physical sciences, but, as Chambers notes, the reality investigated by these sciences is fundamentally different from that explored by the social sciences: the social world being more transitory, experiential and tolerant of competing ideas (Chambers,1993:2). Consequently, Chambers uses a broader conception of paradigm, based on what he refers to as the 'normal professionalism' of the social sciences. By this he means 'the thinking, methods and behaviour dominant in a profession or discipline, and, in the case of development, the action as well' (ibid:3).

The dominant development paradigm then, is that which informs development theory and practice at the global level. It represents the dominant modes of thinking about development, the methods by which these are implemented at the local and national levels, and the goals to which they are directed. It is important to note, however, that although the dominant mode, it is by no means the only way of thinking about

development. As we shall see, the currently dominant paradigm is merely one of a range of interpretations as to the means and meanings of development. The fundamental point is that the physical manifestation of development theory is the result of hegemonic power structures, rather than the rectitude of the development model per se.

Esteva suggests that the dominant form of development as it exists today was born on the Twentieth of January 1949 with the inauguration speech of President Truman in the United States. Said Truman:

> We must embark on a bold new program for making the benefits of our scientific progress available for the improvement and growth of underdeveloped areas (Truman, quoted in Esteva,1992:6).

Although perhaps an admirable goal, even Truman could not have foreseen the consequences of such a statement. In the time frame of one speech the majority of the world's population came to be in a disadvantageous and undesirable position vis-á-vis the minority, the answer to which was 'development'. As Esteva puts it:

> In a real sense, from that time on, they ceased being what they were, in all their diversity, and were transmogrified into an inverted mirror of other's reality: a mirror that belittles them and sends them off to the end of the queue, a mirror that defines their identity, which is really that of a heterogenous and diverse majority, simply in the terms of a homogenizing and narrow minority (Esteva,1992:7).

By stating 'the benefits of our scientific progress', Truman also suggested to the rest of the world, and particularly those underdeveloped areas to which he referred, that they should hold the United States as the goal to which they should aspire. In this respect the goal of development became, almost overnight, the 'formidable and incessant productive machine' that was the United States economy in the immediate post-World War Two period (ibid:6).

Development, during this time, became almost totally synonymous with economic growth and industrialisation. In effect development became an economic phenomenon and an economic problem (Todaro,1994:14). Consequently gross national product (GNP) and per capita measures of

this, as indicators of the health of an economy, became indicators of development and, by proxy, indicators of human welfare.

The belief in economic growth, and latterly economic growth as development, can, however, be seen to be a product of a particular value system which places economics at the centre of human social processes. As Mehmet suggests, the dominant form of development represents the transferral of a Western value system to the Third World (Mehmet,1995:8-17), and as such an analysis of global developmentalism includes Western value systems.

Western Value Systems and Development

As has been suggested, global development practice in the post-World War Two period has, to a large extent, been informed by a Western, Eurocentric world view which holds economics and science as central to human existence, and fundamental to an understanding of the universe. The emergence of this world view at a global level, however, can be seen to lie in the process of global colonisation which began in the sixteenth century, and the pace of which increased with the advent of industrialisation in Europe in the eighteenth century. As Soja points out:

> Among the many effects of European colonization has been the spread of a world culture based on modern science and technology and specific standards of government organisation and operation...The essence of this diffusion process is change, psychological, social, cultural, economic, and political and its composite impact has been labeled "modernization". (Soja,1968:1)

The philosophical and conceptual basis for the world view itself lies in the scientific revolution of the sixteenth and seventeenth centuries. At this time thinkers such as Francis Bacon, Rene Descartes and Isaac Newton revolutionalised the way in which Europeans conceptualised the world (Pepper,1984:3). The central doctrine of this worlview suggests that the universe is comparable to a machine consisting of a series of parts, the movement of which is governed by universal laws. By the application of rational thought, reductionist science and mathematical formula, the

'machine' could be manipulated and controlled to suit human desires (Capra,1982:37-54).

This conceptualisation of the universe was later applied to human society itself: by John Locke, who suggested that human society consisted of a set of individuals each acting in their own interests, but within the parameters of universal, 'natural' laws (ibid.:56); by Adam Smith who suggested that the basis of all wealth was the application of human labour to natural resources, and that an inherent human predisposition for barter was best governed by the 'invisible hand' of the market for the benefit of all: benefit being seen as a synonym for wealth; and, by David Ricardo who suggested an economic model of human society consisting of 'a logical system of postulates and laws, involving a limited number of variables, that could be used to describe and predict economic phenomena' (Capra,1982:210).

Both Smith's and Ricardo's work are seen to mark the begining of the divergence between economics and the ethical and moral considerations of its application to society (Goulet,1971:6). Ricardo in particular emphasised the supposition of economics as value free science, which forms one of the basic principles of the Western scientific world view, and went so far as to suggest that the poor were entirely responsible for their own situation (Capra,1982:211).

It is because of this world view that for thirty years at least after World War Two, development problems in the Third World were seen as economic problems. As Ozay Mehmet suggests:

> This World view rests on a utopian presumption of 'economics as value free science', rational, analytical and technical, concerned with ranking investment priorities and choosing amongst alternative allocations of scarce resources to promote economic development (Mehmet,1995:1).

In the post-World War Two period, then, the desire for Western countries to allow the Third World to benefit from their scientific and industrial

progress, amounted to nothing more than the projection of the Western world view into peripheral areas, but disguised as development.

Post-World War Two Development

The emphasis on industrialisation in the dominant development paradigm is suggested by Hettne (1990) to be the product of political imperatives which saw the rise of industrialism in Europe in the eighteenth and nineteenth centuries. The process of nation-state consolidation and territorial accumulation which occured in Europe prior to, and during this period, and the impetus of war gave rise to a particular form of industrialisation characterised by standardisation and rationalisation of production based on a 'produce or perish' mentality (Hettne,1990:38).

The industrialisation of the Third World after World War Two, although promoted on the basis of a perceived need for greater global economic integration, can be seen to be the continuation of this process of colonisation and industrialisation. The reality of this process in the post-war period is an attempt to secure factors of production (land/resources and labour in particular) and markets to ensure the continued viability and expansion of Northern industry (Seabrook,1993:97). As Rosa Luxemberg suggests

> Colonialism is a constant necessary condition for capitalist growth: without colonies, capital accumulation would grind to a halt. Development as capital accumulation and commercialisation of the economy for the generation of 'surplus' and profits thus involved the reproduction not merely of a particular form of creation of wealth, but also of the associated creation of poverty and dispossession (quoted in Shiva,1989:1).

Third World development was, and is, therefore founded fundamentally on the initiation of Goulet's first set of change processes concerning production, mastery over nature, rational organisation and technological efficiency. This necessarily required the transfer of these to the South from Northern industrialised countries. As Goulet states, however:

> The crucial problem arises because low-income countries are often thwarted in their pursuit of goals implicit in the first set of processes by the prevailing

structures which govern the second. As a result, their response to global change processes is qualitatively different from that observed in advanced countries, which enjoy greater relative strength and can influence international events in more decisive fashion (Goulet,1971:15).

The suggestion is that although post-World War Two development in the Third World was, and is, based on a model of industrial expansion devised in the First World, the outcomes of this process wil not necessarily be similar to those experienced in industrial countries. The result has been that Third World countries have, in large part, received no benefit from this process of economic integration due to their lack of influence over power and control processes which operate at both the national and global level.

In this respect, following Gunder Frank (1975:3) the spread of industrial capitalism into peripheral regions is in fact a catalyst for underdevelopment in those regions. This not only puts in place structures of development and underdevelopment between countries, but replicates these within countries between differing sectors of the population.

The fact of underdevelopment in many regions was despite the best intentions of national governments and international agencies. In 1973, after almost thirty years of so-called global development, the then president of the World Bank was moved to say:

> Despite a decade of unprecedented increase in the gross national product... The poorest segments of the population have received relatively little benefit.... The upper 40 per cent of the population typically receive 75 per cent of all income (McNamara quoted in Sachs,1992:6).

This statement suggests an increasing recognition of a crisis within development. Throughout the 1960s and 1970s concern was raised and criticism voiced that although vast resources were being allocated to development of the Third World, little progress was being made on the problem of poverty.

The Crises of Development

Criticisms of development practice in the Third World have tended to focus on the perceived impact of a development paradigm which not only works to systematically marginalise poor people, but also to actually increase the incidence of poverty, the alleviation of which was development's fundamental goal. Marxist analyses in particular were vociferous in their criticism of neo-classical approaches to development (Redclift,1984:1). They saw these as essentially imperialistic, and rather than working to increase the self-reliance of developing countries, actually worked to the contrary to produced a system of dependence. This was particularly the case in those countries attempting to export primary products and implement import substitution policies. These critiques alternatively suggested that the development of capitalist modes of production in the Third World, rather than replace traditional modes, articulated with them in an exploitative relationship to actually retard local level development (Schuurman,1993:2-7).

Irrespective, however, of theoretical debates concerning the crises of development, the general consensus was that in many parts of the Third World poverty was showing little sign of abatement. Perhaps more seriously, many countries in the Third World were moving from long term developmental strategies to short term survivalist strategies, in order to cope with increasing debt, starvation and loss of social cohesion (Hettne,1990:21). Although the post-World War Two global development programme was initiated to allow 'underdeveloped' areas to benefit from the scientifc advances and industrial progress of the West, the result has been a growing disparity between rich and poor countries:

> In 1960, the Northern countries were 20 times richer than the Southern, in 1986 46 times (Sachs,1992:3).

In effect the Northern countries have continued to 'develop', while in many ways the South has gone backward. As Dumont suggests:

> The number of desperately poor people, "the global underclass" (Eckholm,1982) has remained steady at about one fifth of the human race. These are people who

live on the edge of survival, at the mercy of the apocalyptic riders - death, famine and disease. Their living conditions, housing, health, nutrition are an insult to notions of equity (quoted in Kirby et al,1995:2-3).

The 1992 World Development Report suggests that although average consumption rates in developing countries have increased by seventy per cent over the previous twenty five year period, more than one fifth of the global population continues to live in a state of acute poverty. This situation, the report states, would not exist if gains were evenly spread (World Bank, 1992:29).

Concurrent to, and associated with, the increasing recognition of a crisis in development, was a concern for the impact which development was having on the environment. The 1972 United Nations Conference on the Human Environment in Stockholm is perhaps the earliest recognition of this at a global political level, but one which was preceded by a number of global scientific meetings concerning environmental problems, and popular environmental movements in the industrialised countries. As has been suggested, it is these twin crises in environment and development which initiated the evolution of the concept of sustainable development. In this respect it is worth investigating the concept of environmentalism, as a conceptual component of sustainable development, in more detail.

ENVIRONMENTALISM

The history of thinking about sustainable development is closely linked to the history of environmental concern and people's attitudes to nature. Both represent responses to changing scientific understanding, changing knowledge about the world and ideas about society (Adams,1990:14).

Concern for the environment, however, is not merely a result of new social movements which developed in industrialised countries in the 1960s: as early as 1949 Aldo Leopold wrote of a concern for the lack of a 'land ethic' in human's dealings with nature (1949:217-241). Neither is the intellectual tradition of environmentalism solely concerned with the conservation and protection of nature. Authors such as Passmore (1980), O'Riordan (1981,1989) and Pepper (1984), in seeking to understand the roots of our present ecological crises, have concentrated on revealing the historical

evolution of the Society-Nature relationship, and how this relates to present modes of thinking about the environment and human's place in it.

The Society-Nature Relationship

O'Riordan suggests that human interaction with the environment can be viewed as a duality of utilitarian and conservationist perspectives. This duality consists of a Nature-as-Usufruct view, and an opposing Nature-as-Nurture perspective (see Figure 2.1), each of which contributes to the wider body of the environmentalist intellectual tradition (O'Riordan,1989:78). Each side of the duality is supported by, and in turn supports, a specific world view. Porritt suggests that both these world views exist side by side in contemporary society: one informing the 'economic output maximisation for human welfare point of view'; and the other the view that humans exist within nature in an interdependent relationship, and should therefore live in harmony with it (Porritt,1984:15).

Figure 2.1: Human-Nature Relationships
Source: O'Riordan,1989:82
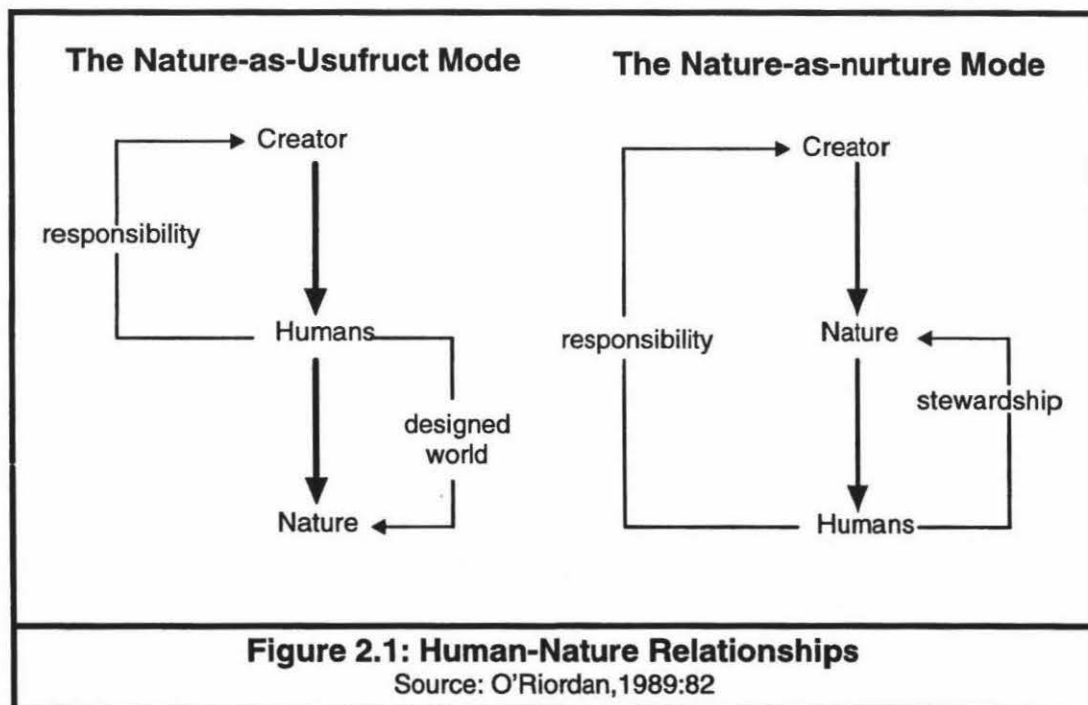
In this sense environmentalism exhibits a fundamental tension between two opposing views as to how humans should interact with the environment (O'Riordan,1989:79). It is this tension which Redclift (1987)

suggests provides one of the basic contradictions within the concept of sustainable development, and that is the need (or desire) to both use and preserve the environment.

Nature-as-Usufruct

The idea that nature (and the environment as a subset of nature) exists for human use is one which is generally pervasive in Western cultural history, but noticeably more dominant in the industrial age. Passmore suggests that this particular environmental world view (which is inherent in the Western scientific world view) dates from Hebraic religion and early Greek science. A peculiarity of these groups was that they did not hold nature as divine. For the Hebrews God, who was spearate from nature, had provided nature for the use of humans, and as such:

> ...man [sic] is at liberty, under a special charter from God, to exploit it as he wills - subject only to restrictions specifically imposed by god (Passmore,1980:10).

White also attributes the estrangement of human action from nature to the Judaeo-Christian tradition, and suggests that the anthropocentrism of Christianity, and its central tenet that humans should create their own destiny, provides one of the root causes of our current ecological crisis (White,1967:1205; O'Riordan,1981:203).

It is during the scientific revolution that the emergence of a 'technocentric' mode of environmentalism becomes apparent; one which is characterised by Hays as 'the application of rational and 'value free' managerial techniques by a professional elite' (quoted by O'Riordan,1981:1). According to Weber (quoted by Murphy,1994), it is this intellectualized rationality which became a foundation of the world view guiding human action in the technocentric mode: 'belief in mysterious forces is replaced by belief in the power of knowledge and by instrumental rationality in the form of technology' (Murphy,1994:4). Murphy suggests that under this world view, nature, and humans' relationship with it, are seen as plastic: nature can be moulded to suit human desires through the application of science and technology (ibid.:4)

Essentially, then, the Nature-as-Usufruct perspective is an underlying assumption of the Western scientific world view. The belief that nature is plastic, and that it exists to provide for human progress is indeed a necessary precondition for industrialisation, the spread of capitalism, and its concomitant institutions of private property and rational organisation (ibid:28).

Nature-as-Nurture

The Nature-as-Nurture perspective of environmentalism provides an alternative, and indeed has evolved as an antidote, to the usufruct perspective (O'Riordan,1989:79). The basic assumption of this view is that humans can only survive as a partner with nature in a co-evolutionary relationship. This stems from a realisation that humans have the ability to destroy the environment within which they must exist. As such a tradition of stewardship and cooperation with nature has arisen within human society in an attempt to act as a moderating influence on this ability.

Passmore places the birth of this tradition (in actual fact he defines two traditions: one of stewardship, and another of cooperation) within the Roman Empire in approximately the third century AD. The belief in this period was that humans had a duty to God to protect nature and cooperate with it to perfect it (Passmore,1980).

The nurture tradition was further developed by the romantic transcendentalists in mid-nineteenth century United States (such as Thoreau, Emerson and Whitman) who suggested that nature:

> ...enjoyed its own morality which, when understood, could lead the sympathetic and responsive human being to a new spiritual awareness of his own potential, his obligations to others, and his responsibilities to the life-supporting processes of his natural surroundings (O'Riordan,1981:3; see also Redclift,1984:39-40).

From the transcendentalists came two associated streams of thought. First, bioethics suggests that biotic communities have a right to existence independent of humans, that nature has a purpose, and that this should

be respected as an ethical principle. In this respect humans have a moral obligation to consider the ecological ramifications of their actions. Second is the notion of small self-reliant communities which foster self-actualisation and collective responsibility by bringing humans closer to nature (O'Riordan,1981:7; Pepper,1984:71). This body of thought evolved from a concern for the dehumanizing effects of industrialisation and urbanisation which removed humans from nature to the detriment of their spiritual and social lives.

These two perspectives within an ecocentric mode of environmentalism, thus form the antithesis of those perspectives in the technocentric mode. O'Riordan suggests that in totality these present a spectrum of ideas concerning humans' relationship with nature, and their actions within and upon it (1989:85). Presented in Table 2.1, these perspectives suggest a fundamental tension within modern environmentalism between the technocentric and the ecocentric modes. The environmental criticism of development in the 1960s and early 1970s, although indicative of a reaction to the visible negative impacts of development, is, at a more fundamental level, an articulation of this tension at a global level.

When Two Worlds Collide: The Globalisation of Environment and Development.

The late 1960s and early 1970s provide a watershed in thinking about both development and environment. The distinguishing characteristic of this period was a 'greater and more widespread concern about a plethora of issues' (Pepper,1984:15), which Adams refers to as the globalisation of enviromentalism (1990:14-15).

Stemming from Western Europe and North America, concern for local level environmental problems, such as the fallout from nuclear tests, the acidification of Swedish lakes and forests and the presence of DDT in both Arctic and Antarctic fish, grew into a general critique of the industrial process, and the negative impacts of this process at a global level

(Reid,1995:3). A recognition emerged that local level economic activity could have global level environmental ramifications, a realisation which was further inforced in human consciousness by photographs of Earth hanging in space taken by orbiting spacecraft (Sachs,1992:26).

Gaianism	Communalism	Accommodation	Intervention
Faith in the rights of nature and of the essential need for co-evolution of human and natural ethics	Faith in the co-operative capabilities of societies to establish self-reliant communities based on renewable resource use and appropriate technologies	Faith in the adaptability of institutions and approaches to assessment and evaluation to accommodate to environmental demands	Faith in the application of science, market forces, and managerial ingenuity
'Green' supporters; radical philosophers	Radical socialists; committed youth; radical-liberal politicians; intellectual environmentalists	Middle-ranking executives;environmental scientists; white collar trade unions; liberal-socialist politicians	Business and finance managers; skilled workers; self-employed; right-wing politicians; career-focused youth
0.1-3% of various opinion surveys	5-10% of various opinion surveys	5-70% of various opinion surveys	10-35% of various opinion surveys
Demand for redistribution of power towards a decentralized, federated economy with more emphasis on informal economic and social transactions and the pursuit of participatory justice		Belief in the retention of the status quo in the existing structure of political power, but a demand for more responsiveness and accountability in political, regulatory, planning, and educational institutions	

Table 2.1: Contemporary European perspectives in environmentalism
Source: O'Riordan,1989:85

In 1972, at the behest of Sweden, the United Nations convened the Conference on the Human Environment in Stockholm, the primary motivation for which was concern for environmental problems caused by industrialisation (Adams,1990:36-37). The Stockholm conference is generally regarded as a key event in the emergence of global environmental concern, particularly at a political level, and represents an attempt to find global level solutions to environmental problems. In this respect, however, it is also regarded as something of a failure.

Although not the first international conference concerned with the environment, Stockholm differed from previous ones in its focus on the broader social, political and economic issues concerning the environment

and humans' place in it (Miller,1995:7). Initially, the conference was intended to act as a forum for the debate of environmental problems determined in large part by developed countries, and particularly those concerning pollution, population, limits to growth and resource use. Developing countries, however, voiced a concern that an attempt to control resource use at the global level was nothing less than an attempt to wrest control of their resources from them. Furthermore, they suggested that because industrialised countries used the lion's share of resources and contributed most to pollution, it was not their responsibility to contribute to solutions (Biswas and Biswas, quoted in Adams,1990:37).

Through weight of numbers, Third World countries were able to have issues of development included on the Stockholm agenda. In this respect, the Stockholm Conference not only heralded the emergence of a global recognition of the links between environment and development, but perhaps more importantly, it sounded the arrival of a Third World lobby in the global political arena, changing fundamentally the nature of the global development/environment agenda (Miller,1995:8).

From Stockholm to Rio: The Emergence of (Global) Sustainability

During the intervening twenty year period between Stockholm and the next global conference on environment and development in Rio in 1992, a number of pivotal events highlighted the links between environment and development, and mapped the emergence of the concept of sustainable development at the global level. In 1972 the publication of the *Blueprint for Survival* (Goldsmith et al.,1972), and *Limits to Growth* (Meadows et al.,1972) had the effect of giving a rude shock to a complacent and affluent middle class in the industrialised countries (O'Riordan,1981:53-54). Although later largely discredited by the scientific community on the basis of being either utopian (*Blueprint for Survival*), or based on incorrect data and analysis techniques (*Limits to Growth*), both documents had the effect of bringing to popular attention the folly of excessive resource use

and environmental exploitation. They also suggested a need to seek alternatives to the industrial production model of human progress.

A pivotal event from the perspective of developing countries occurred in 1974 with the Cocoyoc meeting of experts in Mexico. The central focus of this meeting was on environmental problems faced by Third World countries, and particularly those concerning the poor in these countries. The key result of this meeting was a recognition that the basic needs of the poor were as much a part of global environmental problems as oil spills in the North Sea. As Adams puts it:

> The resulting Cocoyoc Declaration pointed to the problem of the maldistribution of resources and to the inner limits of human needs as well as the outer limits of resource depletion. It pointed to basic needs, and called for a redefinition of development goals and global lifestyles (Adams,1990:40).

Specifically, the Cocoyoc Declaration stated that the main purpose of development 'should be not to develop things, but to develop man [sic].... Any process of growth that does not lead to the fulfilment of [basic needs] - or even worse, disrupts them - is a travesty to the idea of development' (quoted in Esteva,1992:14-15).

This represents the emergence of a new critique of development and its relationship to the environment. It suggests that the plight of the poor and the environment in the Third World are not only inextricably linked, but that development itself, under the dominant development paradigm outlined above, may be part of the problem. There was increasing concern as to the efficacy of the economic growth model for solving the development problems of these countries (Esteva,1992:13).

In this respect, the outcome of Cocoyoc indicates a merger between movements concerned, on the one hand, with the 'basic needs' of people, and particularly the poor, and the perceived inability of mainstream, 'growth maximising' development to provide for these; and on the other hand, those concerned with the ability of the planet's resources to continue to provide for such development (Friedmann,1992:2). This was

followed in 1975 with a critique by the Swedish Dag Hammarskjold Foundation of mainstream development models, and particularly their inability to 'address the question of mass poverty and sustainability' (ibid:3).

In effect, the environmental crisis had, in the Third World at least, become inextricably linked to the crisis of development. What was needed was a redefinition of development goals to account for both the incidence of poverty and declining environmental health. The result was a range of 'alternative' development strategies which attempted to focus on people and the environment. The basic needs approach to development favoured a 'direct approach' between development and poverty, rather than the 'trickle-down approach' of conventional economic development (Hettne,1990:167). Later, ecodevelopment strategies attempted to incorporate the development system into an environmental framework, focusing on self-reliance. The concern here was to 'neither to capture other countries' resources nor to give way to interlopers' (Riddell,1981:5).

Although, to some, the 1980s are regarded as 'the lost decade of development' (Parliamentarians for Global Action, 1990, quoted in Bartelmus,1994:1) they were, on a theoretical level, important in a number of respects, and most notably for the arrival of the concept of sustainable development on the international political stage. The year 1980 saw the publication of two important reports concerning world development. First, the Brandt Report (cited in Redclift,1984:24; Chatterjee and Finger,1994:23) highlighted the growing disparity between rich industrialised countries, predominantly in the Northern hemisphere, and the relatively poor developing countries, the majority of which were in the South. This added emphasis to repeated calls from developing countries for socio-economic justice to be seen as central to the environment/development debate.

More important with respect to the evolution of sustainable development was the World Conservation Strategy (WCS) published by the

International Union for the Conservation of Nature (IUCN) in the same year. It was through this report that the concept of sustainable development itself was introduced into the global development discourse. Additionally, the WCS represented the first instance of conservation being suggested not simply as a development goal, but as a means to this end as well (Adams,1990:42). In this sense the basic premises of the WCS stressed the interdependence of development and environment goals:

> ...that humanity, which exists as part of nature, has no future unless nature and natural resources are conserved.

and,

> ...conservation cannot be achieved without development to alleviate the poverty and and misery of hundreds of millions of people (IUCN/UNEP/WWF,1991:1).

Although the WCS indicates a concern for developmental objectives, its prescription for change was primarily conservationist. As Adams remarks, the WCS 'bears the clear imprint of the neo-Malthusian concerns of the ecological roots of the 'new environmentalism'', meaning that the WCS represents a call for more resource management and population controls (Adams,1990:47). Redclift's criticism goes further:

> Despite its diagnostic value the World Conservation Strategy does not even begin to examine the social and political changes that would be needed to meet conservation goals (Redclift,1984:50).

Recognising the need for an in-depth investigation of the links between environment and development, the United Nations General Assembly, in 1984, initiated the World Commission on Environment and Development (WCED). The brief of this commission was specifically to:

a)   Re-examine the critical issues of environment and development, and formulate innovative, concrete, and realistic action proposals to deal with them;

b)   Strengthen international cooperation on environment and development, and assess and propose new forms of cooperation that can break out of existing patterns and influence policies and events in the direction of needed change; and,

c)   Raise the level of understanding and commitment to action on the part of individuals, voluntary organisations, business, institutes, and governments (WCED,1987:363).

Within these terms of reference the Commission implemented a broad and far reaching investigation which, over almost four years, included meetings, submissions and independent reports at all levels of the international political arena, from the local to the global. The resulting report, entitled *Our Common Future*, was published in 1987, and is generally regarded as an publication which changed the nature of global political discourse (Norgaard,1994:194-195).

The WCED set out seven fundamental principles which it called on governments to embrace and implement, presented here in Table 2.2. The nature of these principles, and the discussion which preceded them, is indicative of a merger between the multilateral concerns of development and the global concerns of environmentalism (Adams.1990:58). The WCED is also representative of what Norgaard (1994:12) regards as both a meeting of the environmental and development perceptions and aspirations of North and South, and a synthesis among world political leaders as to the nature and causes of environmental problems. This amalgamation of global environment and development concerns was attempted at Stockholm in 1972 by developing countries, and again given precedence at Cocoyoc in 1974. It is only with the WCED however, that this amalgamation gained unilateral global recognition.

1.	Reviving growth
2.	Changing the quality of growth
3.	Meeting essential needs for jobs, food, energy, water and sanitation
4.	Ensuring a sustainable level of population
5.	Conserving and enhancing the resource base
6.	Reorienting technology and managing risk
7.	Merging environment and economics in decision making

Table 2.2 : Strategic Imperatives for Sustainable Development.
Source: WCED,1987:49

Because the WCED started from the premise that problems of environment and development must be approached as a single issue, it was able to conclude that solutions would not be arrived at by taking a

narrow view (Adams,1990:58). A wider perspective was required which incorporated 'the factors underlying world poverty and inequality'. Additionally, as Ekins points out, the commission was able to 'marshall the facts of global environmental decline in an absolutely clear-cut and definitive way' (Ekins,1989:5). As such it was able to avoid the rhetoric of environmental destruction common in previous environmentalist reports.

In setting an agenda for change the WCED urged nations to accept and implement the principles of sustainable development, which it defined as:

> Development which meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED,1987:43).

Within this definition lay a concern for the plight of the poor in the Third World, but also the problem of conserving the resource base for use by future generations.

The WCED, then, represented the incorporation of environmentalist concerns into a global development agenda. In this respect, the articulation of the ecocentric mode was given some credence at a global level, but, in order to gain and maintain political acceptance and credibility, it was watered down by technocentric developmental mechanisms. The result was a document which, although it highlighted the plight of the environment and poor people within it, suggested that the solution is more development, and specifically economic growth: 'growth that is forceful and at the same time socially and environmentally sustainable' (WCED,1987:xii).

Continuing in a technocentric and managerialist vein, the WCED considered the key limits to growth as being primarily technological and social in nature:

> The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organisation on environmental resources and by the ability of the biosphere to absorb the effects of human activity. But technology and social organisation can both be improved to make way for a new era of economic growth (WCED,1987:8).

In this respect the Commission's perception of the environment, and particularly that interpretation of the environment which it refered to as the 'global commons', is of a source of natural resources for human activity. The effect of this was twofold: First, it placed the environment within a framework of human advancement to sustainability rather than the reverse, and in effect reduced the environment to just one factor in the economic development equation. Second, by referring to the environment as a global commons to be managed by a human community of nation-states, the report effectively globalized both development and environment. In this way the WCED denigrated local level community resource management and decision making in favour of global political solutions (Chatterjee and Finger,1994:27-28).

As a policy document therefore, *Our Common Furture* provides sufficient ambiguity and political optimism to be widely acepted, but also widely misunderstood and misinterpreted. In this respect it could equally prove to be a recipe for unsustainability, the opposite of that which is intended (Ekins,1989:5).

UNCED: Reinforcing the Local in the Global

In the intervening five years between the WCED and the United Nations Conference on Environment and Development (UNCED, also referred to as the Earth Summit) at Rio de Janiero in 1992, the global development and environment community was inundated with a profusion of reports, documents, articles and books both critical and supportive of the concept of sustainable development (see for example: Redclift, 1987; Barbier,1987; Tisdell,1988; Simon,1989; Rees,1990; Lele,1991 to name but a few). Additionally, scientific and political attention continued to focus on global environmental problems, particularly those relating to ozone depletion and atmospheric warming. Partial success in addressing such issues through international legal conventions, such as the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987, instilled

optimism that further progress could be made on global problems using such mechanisms. This optimism was carried into UNCED by way of pre-prepared conventions relating to climate change (The Framework Convention on Climate Change) and biological diversity (Convention on Biological Diversity).

The key outcomes from Rio include these two conventions and the Rio Declaration on Environment and Development and Agenda 21. The Rio Declaration presents 27 principles of environment and development, and is intended as a framework of basic principles for guiding the practice of sustainable development. Agenda 21 is intended as an action plan for the actual implementation of these principles. Both documents recognise the importance of environmental protection *and* the need for development and poverty alleviation. The Rio declaration in particular stresses these sentiments:

> Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature (Principle 1);
>
> All states and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world (Principle 5).
>
> Indigenous people and their communities, and other local communities, have a vital role in environmental management and development...states should recognize and duly support their identity, culture and interests and enable their effective participation (principle 22) (from the Rio Declaration on Environment and Development, in Thompson,1993:87-89).

Agenda 21 provides a 'wish list' for achieving sustainable development at a global scale. In this respect it can be seen as a compendium of the negotiated wisdom, insights and interests pertaining to sustainable development of the often divergent groups present at the conference (Koch and Grubb,1993:97-98). As such it presents a broad range of often vague ideas and prescriptions:

*   Reducing inequality between countries, particularly those relating to the North-South divide;

* The promotion of a bottom up, community based approach to development in order to combat poverty and provide sustainable livelihoods for people, particularly the poor;

* Increased emphasis placed on reducing unsustainable production and consumption, particularly in industrialised countries;

* The recognition that world population growth places severe stress on the life-supporting capacities of the planet, and on the ability of social systems to cope;

* The strong interaction between health and social, economic and environmental factors, and the need for work to be undertaken in such areas as primary healthcare, communicable diseases, vulnerability and environmental pollution;

* Considerable emphasis (14 chapters) placed on protection of the environment and the mitigation of human impact upon it; and,

* A broad range of suggestions as to the means of implementation, including financial resources, science and technology, education, International cooperation and institutional arrangements, and information exchange (Koch and Grubb,1993:103-153; Sitarz, 1994).

Holistically, Agenda 21 and the Rio Declaration present a 'master plan' of principles and action for sustainable development at a global scale (Kock and Grubb,1993:153). The basic theme of this master plan is a more bottom-up approach to development which places emphasis on people, communities and non-government organisations, particularly in achieving a basic level of livelihood for people, and a greater level of participation of marginalised groups (particularly women) in decision making and development processes (ibid.).

The emphasis within these two documents on incorporating (or re-incorporating) local people into the development process represents a slight shift in focus of the global sustainable development discourse from that which was presented by the World Commission on Environment and Development in 1987. Although the WCED did recognise the importance of reducing poverty and increasing local security of access to, and use of

resources, it presented an essentially global perspective of environment and development.

The Rio reports suggest, however, that local level action is necessary to ensure both the promotion of development and subsequent reduction of poverty, and the maintenance of environmental integrity. Although maintaining an essentially global, and anthropocentric, perspective of development and environment, both the Rio Declaration and Agenda 21 declare the importance of national and local solutions within a global framework. In this sense, the Rio Declaration also attempts to reinforce principles such as sovereignty, the right to development, equity (both within and between countries), and active participation of all citizens (Thompson,1993:90-91).

Although both these documents are the result of some form of global consensus achieved at Rio, it is nonetheless a consensus of Northern and Southern *governments*. As Adams suggests, both documents also reflect the often acrimonious debate between these two groups as to the exact wording of the principles and prescriptions involved (Adams,1995:362). In this respect the outcomes of Rio reflect the nature and interests of global political elites which are often discordant with other groups and other interests.

Table 2.3 presents the 'ten-point plan to save the Earth Summit' sponsored by Greenpeace International, the Forum of Brazilian NGOs, Friends of the Earth International, and the Third World Network (Chatterjee and Finger,1994:39-40). It presents an outline of what these groups suggested the Rio Conference should aim to achieve. The fact that the issues of Northern consumption, global economic reform, transnational corporations or the dangers of biotechnology were not addressed at Rio (ibid:40), suggests that two different agendas were in operation: one which hinted that development should not prove detrimental to sustainability; and another which suggested that

sustainability should not prove detrimental to development, and particularly economic development. This reflects an emerging rift within the global sustainable development discourse: it is a rift between North and South, as suggested by Redclift (1994), but it is also a rift between environmentalism and developmentalism, and between elites and non-elites. This suggests that the basis of this rift is associated with power, and particularly a struggle by certain groups to maintain economic power.

1.	Legally binding targets and timetables for reduction in greenhouse gas emissions, with industrialized countries leading the way.
2.	A cut in Northern resource consumption and transformation of technology to create ecological sustainability.
3.	Global economic reform to reverse the South-North flow of resources, improve the south's terms of trade and reduce its debt burden.
4.	An end to the World Bank control of the Global Environmental Facility (GEF).
5.	Strong international regultion of transnational corporations, plus the restoration of the UN Centre on Transnational Corporations, rather than allowing the Business Council for Sustainable Development to go unopposed in the UNCED process.
6.	A ban on exports of hazardous wastes and on dirty industries.
7.	Address the real causes of forest destruction, since planting trees as UNCED proposes, cannot be a substitute for saving existing natural forests and the cultures that live in them.
8.	An end to nuclear weapons testing, phase-out of nuclear power plants and a transition to renewable energy.
9.	Binding safety measures - including a code of conduct - for biotechnology.
10.	Reconciliation of trade with environmental protection, ensuring that free trade is not endorsed as the key to achieving sustainable development.

Table 2.3: 10-point plan to save the Earth Summit
Source: Chatterjee and Finger,1994:40.

As Chatterjee and Finger (1994:42) suggest, the importance of maintaining economic growth and viability is interwoven throughout the Rio Documents, including the convention on Biodiversity, where biodiversity is interpreted to mean 'genetic resources to which biotechnology can be applied to aim for economic growth' (ibid:42). In this way maintaining economic processes is ascribed as much, if not more importance as maintaining ecological processes.

Subsequently, although sustainable development has been promoted globally as the means by which we can save the environment, the concept incorporates, at the global political level at least, the notion that development is synonymous with economic growth. As we have seen, the centrality of economic growth to the dominant development paradigm has been suggested as one of the root causes of the environmental crisis which was a catalyst in the evolution of sustainability thinking. Although sustainability is widely held to be a redeeming concept in human interaction with the environment, it would appear that we have learnt little in the twenty years between Sockholm and Rio.

In this respect it is necessary to take a closer look at the concept, and the arguments surrounding it, it in order to understand how its genealogy is reflected in the various interpretations of it.

Sustainable Development: Semantic Deconstruction

Given the genealogy of the concept of sustainable development, and the fact that it represents the convergence of two opposing world views, it is not surprising that sustainable development has proven to be a contentious area of theoretical debate. Indeed, where the concept appears to generate most conflict is in the means or process by which it may be achieved. In this respect sustainable development differs little from interpretations of development which have preceded it; the suggestion being that physical manifestations of sustainable development are as dependent upon hegemonic power and ideology as mainstream development has been before it. As Pearce et al indicate (Pearce, Markandya and Barbier,1989; Pearce,1993), just as difficulties arise with an attempt to define development, so too do they arise with attempts to define sustainability. The consequence is that sustainable development attracts a wide range of interpretations.

It is useful then, to examine interpretations of the meaning of sustainable development to determine whether it truly does present an emerging development paradigm which will allow for development *and* environmental conservation, or whether it merely represents a refashioning of the status quo.

Sharachchandra Lele (1991) provides a useful 'semantic map' with which to begin to explore the meanings of sustainable development. Presented in Figure 2.2, Lele's diagram suggests that, initially, the meaning of sustainable development is dependent upon the connotations we attach to each of the component concepts. As we have already seen, development is associated with a range of meanings, but a dominant form has emerged which is the result of an ideology which centralises economic growth in the development process.

Perhaps the most common interpretation, however, is that which integrates an ecological component, to suggest that sustainable development involves a process of change which has ecological sustainability as one of its objectives (Lele,1991:608). In this instance, the form which development takes must necessarily be such that it ensures ecological sustainability. Mainstream interpretations of sustainable development thus attempt to integrate traditional developmental objectives within broader ecological sustainability constraints (ibid:609).

A further interpretation of sustainability involves a social component, which may be interpreted to mean either the social aspects of ecological sustainability, or, alternatively, to imply the sustainability of social systems themselves. In this respect a sustainable society may involve the sustainability of human interaction with the environment; or, the sustainability of 'desired social values, traditions, institutions, cultures or other social characteristics' (Barbier,1987; Lele,1991:610). Barbier proposes that Sustainable *economic* development is concerned primarily with:

reducing the absolute poverty of the world's poor through providing lasting and secure livelihoods that minimize resource depletion, environmental degradation, cultural disruption, and social instability (Barbier,1987:103).

Figure 2.2: The semantics of sustainable development
Source: Lele 1991:p608
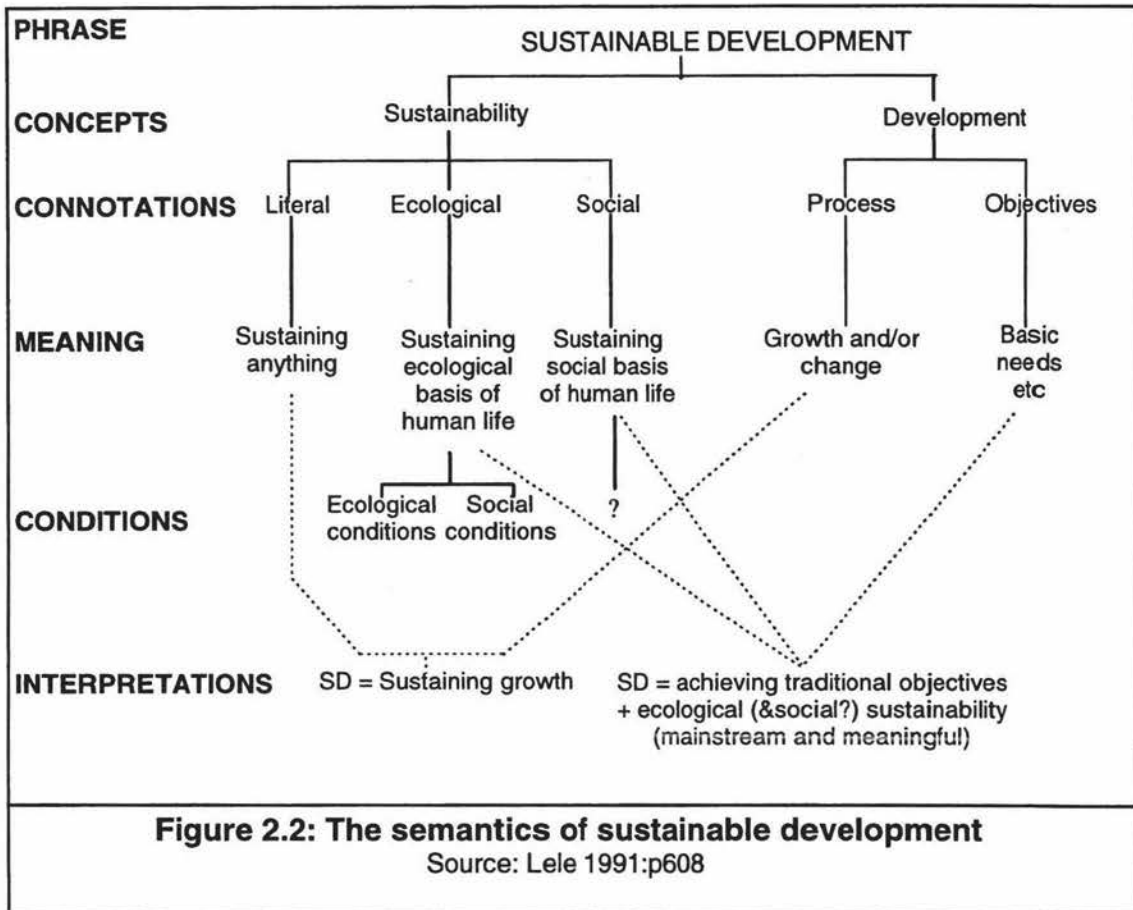
This interpretation indicates that any form of sustainable development, whether it be economic or otherwise, entails a mix of social, economic and ecological objectives. As Barbier further suggests, sustainable economic development is indistinguishable from the development of society as a whole because it necessarily means the 'interaction of economic changes with social, cultural, and ecological transformations' (ibid.). This formulation suggests the interaction of three 'systems': the economic, the social, and the biological, each with its own set of humanly ascribed goals. These are presented in Figure 2.3. The central shaded area of the diagram is the goal of sustainable development, and involves an *adaptive process* of trade-offs between the goals of the three systems, which allows for different goals to be maximized at different times and places, and at different spatial scales (Barbier,1987:104).

There are, however, as Barbier himself admits, potential conflicts within this model. It may not be possible to maximise all goals at the same time, in which case it becomes a value judgement as to which goals receive priority (goals which themselves may be the subject of a value judgement) (ibid:104).

Figure 2.3: The Three Systems of Sustainability
Source: after Barbier, 1987.
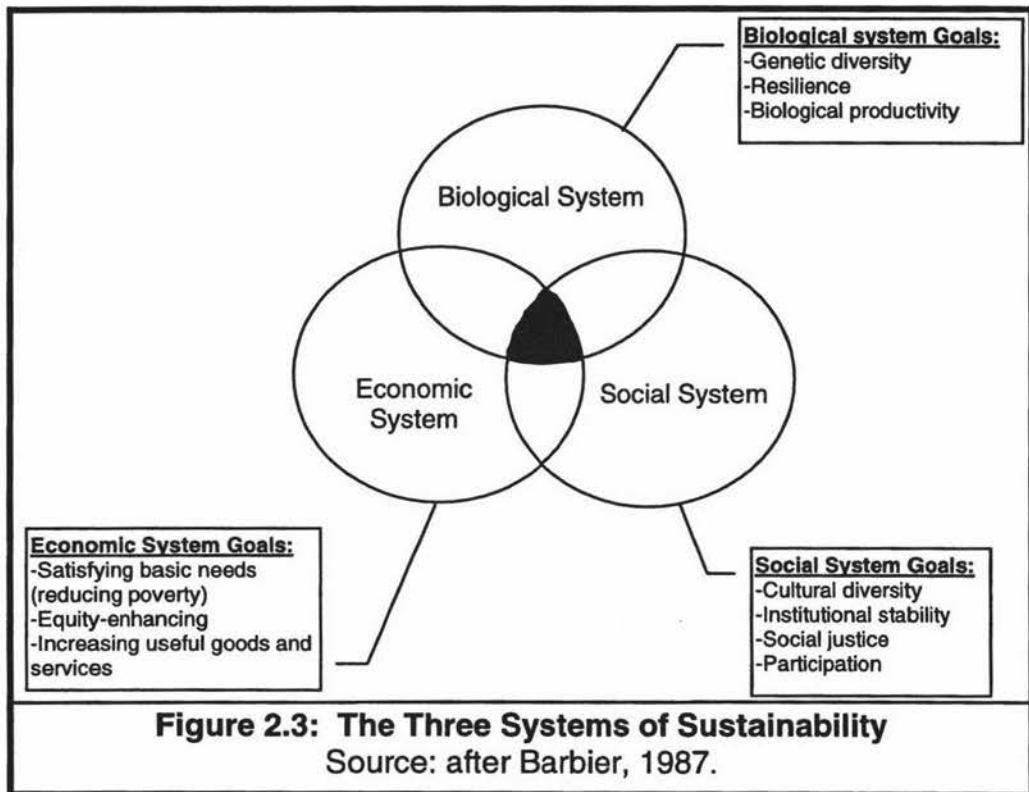
This suggests that if economic goals are valued over and above other goals, then we will, by initiating a development process to achieve these, integrate a factor of unsustainability into that process. By this analysis, if sustainable development can only be achieved by maximising goals across all three systems then an adaptive process of trade-offs is necessary to achieve and maintain sustainability (Barbier,1987:104).

Alternatively, Holmberg and Sandbrook (1992) suggest that a progressive system of dynamic trade-offs would also allow for long term sustainability. In the initial stages of development protecting the resource base on which economic development depends would receive a high priority. As the

development process progresses the focus of environmental policy may shift focus to the effects of industrialisation on the environment. The question arises, however, of deciding at what point that shift would occur. The decision may have to be made to sacrifice economic well-being in favour of social and/or ecological well-being, in terms of both absolute values and relative values between social groups. For example ensuring genetic diversity may require placing a limit on the output of the economy, and enhancing equity necessarily means reducing the relative wealth between groups and individuals.

Following this analysis, Grundy (1993) suggests that sustainable development has evolved into a 'tripartite construct comprising the three interwoven, interdependent, and inseparable strands of ecological, social and economic sustainability. This suggests that rather than being dependent upon a system of trade-offs, sustainable development is an 'evolving, integrative system of ideas and beliefs, based on well defined principles. As Figure 2.4 implies, sustainable development is dependent upon the sustainability of all three strands, with ecological sustainability providing a basis for the sustainability of the other two. The inner triangle represents Kassas and Polunin's (1989) representation of the three systems within which human existence takes place: the biosphere (B), the sociosphere (S) and the technosphere (T).

Figure 2.4 : Tripartite Construct of Sustainable Development.
Source: After Grundy,1993; Kassas and Polunin,1989.
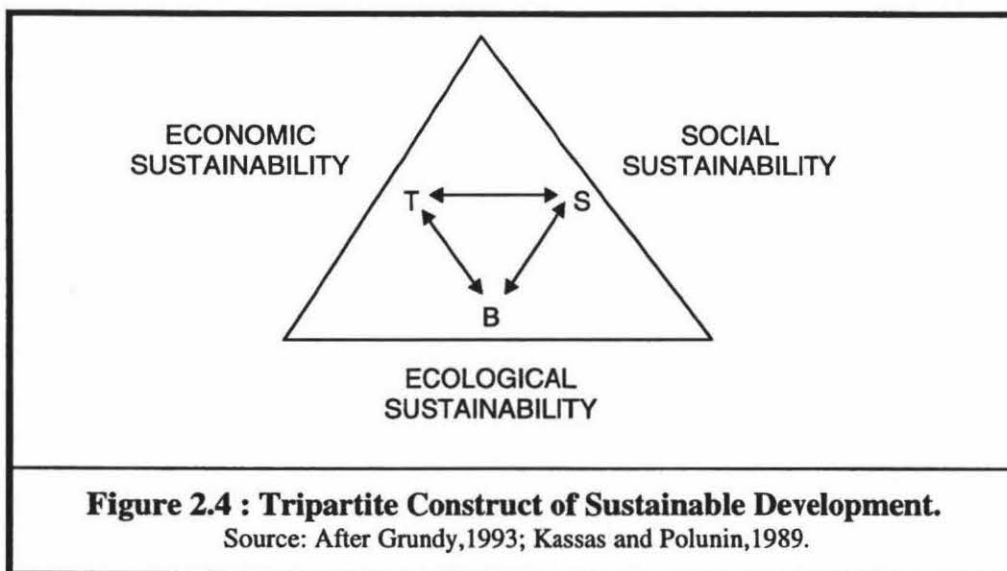
In this conceptualisation, ecological sustainability is of fundamental importance, suggesting as it does that social and economic sustainability are dependent upon physical ecological limits imposed by the environment. Grundy suggests that social sustainability provides the end state towards which development progresses, and is determined by some consensus of social well-being. Economic sustainability provides the means by which a socially determined outcome may be achieved (Grundy,1993:191).

Kassas and Polunin provide a similar analysis, but suggest that the inter-relationships between the three systems are the basis for sustainable development. The biosphere represents the envelope of the planet where life exists, the technosphere refers to the human system of structures set within the space of the biosphere, including settlements, transport and communication networks. The sociosphere represents the sphere of human needs and aspirations, and is the system of human made non-structures (institutions etc) that have been developed for managing the internal workings of human society, and the external relationships between society and the other two systems (Kassas and Polunin,1989:7). Kassas and Polunin further describe the sociosphere as:

> ...the sum of socio-political, socio-economic and socio-cultural institutions and capabilities that prevail in human society (ibid:7).

The fundamental dimension of this system concerning sustainability is not so much the components as it is the inter-relationships between them, and particularly the 'indigenous capability' of management of these inter-relationships. If this management is based on a platform of biosphere conservation, then development can be sustainable. In this respect Kassas and Polunin suggest that it is within the sociosphere that the answer to sustainable development will be found (ibid:8).

Although these analyses provide an indication of what the goal of sustainable development might be, they do not bring us any closer to

understanding how it might be achieved. Formulation of specific goals of sustainability is fundamental in determining policy prescriptions, and to some degree has been achieved through global consensual processes such as the WCED and the UNCED conference. As Caldwell suggests, however, even the commonly accepted definitions of a sustainable society, such as those presented by the WCED (WCED,1987) and *Limits to Growth* (Meadows et al,1972), suggest characteristics not generally found in developed countries. These include some degree of unity, coherence and steadiness in economic, social and ecological systems (Caldwell,1994:193).

The problem with defining sustainable development as a *process*, then, lies in formulating economic and social mechanisms, and relationships with ecological systems which differ from the status quo in their *sustainability*. To this end, opinions differ both between economists and ecologists, and within these two groups as well. Economists have tended to focus on formulating economic mechanisms which account for the environmental values of resources, the issue of intergenerational equity and the integration of ecological parameters into an economic growth paradigm (for example Mikesell, 1992; Pearce,1993; Pearce and Warford,1993; Goldin and Winters, 1995).

As Tisdell contends, however, many economic analyses and the mechanisms they proffer, such as net present value, do not take into account either the social value of environmental assets now, or those which may exist in the future. Tisdell suggests (after Clark,1976) that these mechanisms may even justify the extinction of species under economic criteria (Tisdell,1988:374).

Much contention within economics (and criticisms from other disciplines) concerns the debate over the necessity for economic growth as suggested by the WCED (*Our Common Future*) and UNCED (*Agenda 21*). Authors such as Schumacher, (1973), Daly (1980), Brown and Shaw (1982), Ekins

(1986, 1989), and Meadows et al (1992), are critical of the necessity for economic growth and the suggestion that exponential growth is even possible. Variously they argue that sustainability implies a no growth or steady state economy which at a maximum allows for population increases but within the environmental limits imposed by the Earth's ability to cope.

However:

> It is important to note in the context of sustainable development that capitalist states depend on the expansion of their national economies to ensure that the poor receive enough of the national income to survive. Indeed, economic growth is a major instrument in social policy. By sustaining hope for improvement, it relieves the pressure for policies aimed at more equitable distribution of wealth (Rees,1990:18).

Rees further suggests that we may fast be approaching the absolute limits of economic growth, and as such are not in a position to be able to 'trade-off' ecological damage for economic growth (ibid:23).

The imperative for growth is a central ideological feature of the global economy (Ekins,1989:6). Given that much sustainable development policy is formulated at a global political level (through such institutions as the WCED, the Rio conference and international protocols and conventions), and subsequently transferred to a national political level, it is perhaps not surprising that much of this policy inherently maintains the structures of the global economy.

In this respect, a fundamental aspect of a sustainable economy, whether from a no-growth or a sustainable growth perspective, is that some form of redistribution must occur. Redclift (1987) and Kassas and Polunin (1989) mirror these sentiments by suggesting that a basic component of the unsustainability of the present order lies in the resource allocation and distribution mechanisms of the global economy. These work to construct global and national structures of inequality in access to, and distribution of, resources, and influence the allocative decisions within national

economies. The real priority of sustainability then, is to 'continue the task of chipping away at the ideology of growth until the structure comes down and disintegrates' (Ekins,1989:12).

The global economy, then, must adapt to a model of 'development' (as opposed to growth) presented by our planet itself, which develops qualitatively but does not grow quantitatively in terms of throughput of resources. On the other hand, the goal of wiping out poverty necessarily implies economic growth in those areas where poverty exists, and as such presents a dilemma for sustainability. The solution to this dilemma lies in finding a balance between a negative throughput growth in the North, to free resources for a positive throughput growth in the South to alleviate poverty. The success of this approach will be dependent on the scarcest resource of all: political will (Goodland, Daly and Serafy, 1993:300).

SUMMARY

This chapter has briefly accounted for the emergence of sustainability thinking at a global level over the last fifteen years, and the intellectual roots from which this has stemmed. The emphasis here has been to provide an introduction to the concept, rather than attempt an intellectually rigorous definition, and in so doing provide a basis from which to interpret the practical manifestations of this thinking at the local level. To attempt to define sustainable development is perhaps imprudent given the complexity and breadth of meanings associated with it, and the diversity of contexts within which these are likely to be applied. In this respect such a definition is likely to prove illusionary.

Difficulty in defining sustainable development, however, does not diminish the hold that the concept has over the field of development, and as such theoreticians and practitioners in this field must necessarily work with it.

The concept itself can be seen to be the product of competing intellectual traditions concerning both society's relationship to nature and interpretations of the meaning of progress, and also the twin environmental and developmental crises which occurred in the 1970s and 1980s. By providing a catalyst for a reassessment of interpretations of development, and humanity's interactions with the environment, these crises allowed for the assertion of an alternative paradigm, itself an articulation of the ecocentric mode of environmentalism, to gain some acceptance at a global political level.

Because of the nature of power structures at this level, however, the resulting form which the sustainable development discourse has taken has in many ways mirrored the form of the dominant development paradigm before it. In this sense, the contention that sustainable development presents a new paradigm is perhaps not supported by evidence at a physical level, but rather presents a cooption of ecocentric principles within the status quo.

The nature of the arguments surrounding sustainable development suggests, however, that in order to be truly sustainable, development practice must be founded within a new framework which is based on sustainability principles, rather than the economic growth principles of the dominant paradigm. The implication is that local level development practice will differ from that undertaken prior to the emergence of sustainability.

The focus of local level development, then, becomes one of balancing local development needs with local environmental 'needs'. Chapter three presents one suggested method for achiving this goal. The concept of sustainable livelihoods, as we shall see, suggests that development priorities can indeed be integrated with environmental priorities, such that local people may gain security without incurring environmental costs.

CHAPTER THREE

LIVELIHOODS AS AN INTEGRATING CONCEPT

INTRODUCTION

As we saw in Chapter two the concept of sustainable development represents an attempt to integrate environmental concerns into the development process. Within the concept, however, there is also a recognition that environmental objectives may conflict with the development objective of alleviating poverty, and as such work to place increasing pressure on environment and resources. This conflict, between the need for development to relieve environmental stress caused by underdevelopment, and the need to promote conservation to guard against environmental stress caused by development, provides one of the fundamental contradictions of sustainable development (Redclift,1987; Dovers and Handmer,1993:219). This contradiction is representative of a basic tension between the environmental and developmental objectives of sustainability.

The conventional approach to development and environment has tended to focus on macro-processes which operate at the global and national levels. The emphasis has been on initiating and maintaining economic growth to solve developmental problems such as poverty, at the same time as implementing a conservation framework to solve environmental problems. Although outwardly appearing to solve the environmental-developmental contradiction, this approach represents a band-aid solution in that it fails to remedy to conflict between the need to both degrade and conserve the resource base to ensure survival at the local level.

It is at the local level that the contradiction between environment and development manifests itself most visibly. In many cases poor people, and particularly those in rural areas, are forced to degrade their local resource

base in order to survive. Any attempt to ensure environmental conservation, then, must take into account the specific development needs of local people. Put another way, it is fruitless to talk about grand notions of sustainable development at the local level, without firstly providing a solution to the fundamental contradiction of environment and development.

One solution which has been suggested as a way to effectively integrate environmental and developmental concerns is that of sustainable livelihoods. Presented by the Advisory Panel on Food Security to the World Commission on Environment and Development, the concept of sustainable livelihoods was suggested as the basis of a 'new analysis' of problems of environment and development at the local level (Food 2000,1987:2-3).

The focus of this approach is on the immediate reality of local people, and the problems they face in day to day to survival. The concept is based on the moral imperative of putting poor people first to ensure they have a secure means of living, and on the practical imperative of providing a sound basis from which to ensure sustainable population, management of resources, and the reversal of destabilizing processes such as rural-urban migration. To ensure a basic sustainable livelihood means, in effect, to provide a stable platform from which to promote wider social and economic development which is also sustainable (Food 2000,1987:3-4).

The question which this chapter seeks to address is how the theory of livelihoods connects with that of sustainable development, and more specifically, how, if at all, the theory of sustainable development is able to incorporate the theory of sustainable livelihoods. The central argument presented here is that if sustainable livelihoods are to be the primary focus of development initiatives at the local level, then there will need to be a reorientation of policy at the global and national levels with which to support this goal. This is necessary to ensure that the policy framework

which provides the global and national context for local action is coherent with what that action is trying to achieve.

LIVELIHOODS: A DEFINITION

Chambers and Conway define a livelihood as simply the means by which an individual or group of people gains a living (1992:7). The Food 2000 report suggests, however, that the means by which people gain a living is a complex and variable process. It defines a secure and sustainable livelihood as:

> adequate stocks and flows of food and cash to meet basic needs. Secure refers to secure ownership of, or access to, resources and income-earning activities, including reserves and assets to offset risk, ease shocks and meet contingencies. Sustainable refers to the maintenance or enhancement of resource productivity on a long term basis. (Food 2000, 1987:3).

The actual mechanics of a livelihood strategy will be dealt with in a later section, but, initially, a relationship can be seen to exist between the concept of livelihoods and that of basic human needs. The ability of an individual or household within society to secure an adequate livelihood perhaps provides an umbrella definition of the *primary* basic human needs: those which are necessary for survival and provide some degree of quality of life (Moon,1991:5).

In this respect sustainable livelihoods, although a relatively recent addition to the development discourse, can be seen to have evolved from a tradition of theory and practice regarding development, just as the concept of sustainable development has done over the last two decades.

THE PHILOSOPHY OF LIVELIHOODS

As was indicated in chapter two, development experienced a crisis throughout the 1970s and 1980s which was instrumental in defining the evolution of the concept of sustainable development. The general consensus among development practitioners was that the standard model of development worked only partially in meeting its central goal: that of

providing a secure and healthy existence for all people in all regions of the globe. There was also a recognition that environmental concerns were central to the development process, which in many cases worked to promote the degradation of the resource base.

This crisis gave rise to a number of 'alternative' approaches to development, beginning with 'basic needs' in the 1970s, which in turn provided the basis for the empowerment and participatory approaches of the 1980s and early 1990s (see Friedmann (1992) and Rahman (1993) for analysis of these two alternative approaches).

The moral justification for sustainable livelihoods is similar to that for each of these alternative approaches. As Friedmann puts it:

> If social and economic development means anything at all, it must mean a clear improvement in the conditions of life and livelihood for ordinary people. There is no intrinsic reason, moral or otherwise, why large numbers of people should be systematically excluded from development in this sense or, even worse, should become the unwitting victims of other people's progress. People have an equal and fundamental right to better conditions of life and livelihood (Friedmann,1992:9).

The implication is that development needs to be a people-centred process, rather than a profit or process driven one, and one which takes into account the needs and desires of people, rather than the needs and desires of the process itself. As previous research has shown these differ fundamentally in that the needs of the conventional development process - free trade, markets, economic growth, industrial and infrastructural development - do not necessarily satisfy the needs and desires of all people (for example, Frank (1981), Sachs (1995), Seabrook (1993), and Bodley (1990)).

The common suggestion by these authors is that imposed development models structurally alter the lifestyles of tribal and indigenous people, often to the detriment of their security and well-being. Indeed as Johda has shown, the categories and criteria by which local people determine their well-being differ from those by which outsiders do so. (cited in

Chambers,1995:14). This suggests that the development process has, to a large degree, been driven by a preordained objective defined by abstract ideology rather than the real needs of people themselves.

Further, as Moon has suggested, the analysis of livelihoods and basic needs provides an alternative 'window that exposes other facets of national development, including some not visible from other angles'. The conventional focus on economic growth has tended to 'narrow our vision of development and the manner in which we have sought to shape it' (Moon,1991:7).

The sum of these arguments, and the common theme between them, is that the development we know today represents only a small part of the total possible development which could occur and is indeed necessary if our species is to have a future on this planet.

In this respect the livelihoods approach, and empowerment and participatory approaches more generally, can be viewed as an attempt to introduce an ethical component into the development process. More specifically, these approaches represent an attempt to reintegrate an element of moral philosophy into development as an economic undertaking, and thereby broaden its definition to include social, cultural and even aesthetic values and objectives.

The alternative philosophical basis suggested by a livelihood approach involves asking the questions of 'what and who is development for?' The fact that development has failed to bring about the emancipation of all humans from squalor and disease is indicative of the fact that we really haven't attempted to answer these questions from anything other than an outside and top-down perspective. The livelihoods approach outlined here implies that development, as a process which occurs and a goal which is strived for, necessarily requires a new approach to account for sustainable

livelihoods, and particularly that development which aims to be sustainable.

OLD VERSUS NEW: THE PRACTICAL IMPERATIVES OF LIVELIHOODS

Much of the difficulty with the concept of sustainable development lies in integrating environmental imperatives into the development process, such that the goals of development reflect the importance of the resource base upon which it depends. The concept of sustainable livelihoods has been forwarded as a practical method by which this integration may be achieved. By ensuring that local people are able to derive at least a sufficient livelihood which is secure and sustainable, it is assumed that further sustainable resource management and development initiatives will be possible. The question which this assumption suggests is how the concept of sustainable livelihoods achieves this? To answer this question it is necessary to look at the relationship between poverty, as a reflection of insecure and/or insufficient livelihoods, and the environment.

Poverty and Environment

The conventional analysis of the correlation between poverty and environmental degradation is based on three assumptions as to how poverty places pressure on the environment (Broad, 1994:811). Firstly, it is assumed that there is a basic relationship between the fact of being in a state of poverty and a resulting need to degrade the environment to meet short term needs. This assumption is found in many official reports on environment and development, including Our Common Future:

> Those who are poor and hungry will often destroy their immediate environment in order to survive... (WCED,1987:28).

The second assumption is that because of the relationship between poor people and the environment, it is impossible for them to act in sustainable ways. As Broad puts it: 'poor people cannot in their present state practice

sustainable development' (Broad,1994:812). This second assumption is again recorded in Our Common Future:

> Poverty reduces people's capacity to use resources in a sustainable manner; it intensifies pressure on the environment (WCED,1987:49).

The third assumption concerning the relationship between poverty and the environment is that the answer to the problem is more economic growth. The logic is that if environmental degradation is caused by poor people, then we can eliminate the problem by making poor people less poor.

This analysis suggests that people who live in poverty are forced into ecologically unsustainable livelihood activities in order to survive. If this is indeed the case, then ensuring that people have a sufficient livelihood may well provide a practical imperative for making sustainable livelihoods a key goal for development. The efficacy of sustainable livelihoods as an integrative concept is based on this cause and effect relationship between poverty and environment (Food 2000,1987:3).

There is growing recognition, however, that the poverty/environment relationship is not as simple as this cause and effect dichotomy would suggest. Lele (1991) argues that this two-way link in fact represents an incomplete characterization of the relationship between poverty and the environment. This in itself is also representative of one of Lele's definition of the three fundamental weaknesses of the concept of sustainable development. In Lele's analysis the links between poverty and environmental degradation are more complex than the simple cause-effect model indicates, and he presents a model which he suggests is 'probably a reasonable approximation of the general consensus on the nature of the causes and their links. This is presented here in Figure 3.1.

In presenting this diagram Lele suggests that poverty represents only one side of the issue, with affluence and technology also contributing to the problem. Consequently, in assessing the relationship between poverty and

the environment we must take into account the wider issues of the relationships between rich and poor within countries, between the affluent North and the poor South, and those concerning the global economy as a whole. This necessarily concerns the flows of resources, capital and technology within and between countries, and the impacts that these flows have on the ability of local people to contrive a livelihood.

Figure 3.1: Representation of the poverty-environmental degradation problem.
Source: Lele, 1991:p614
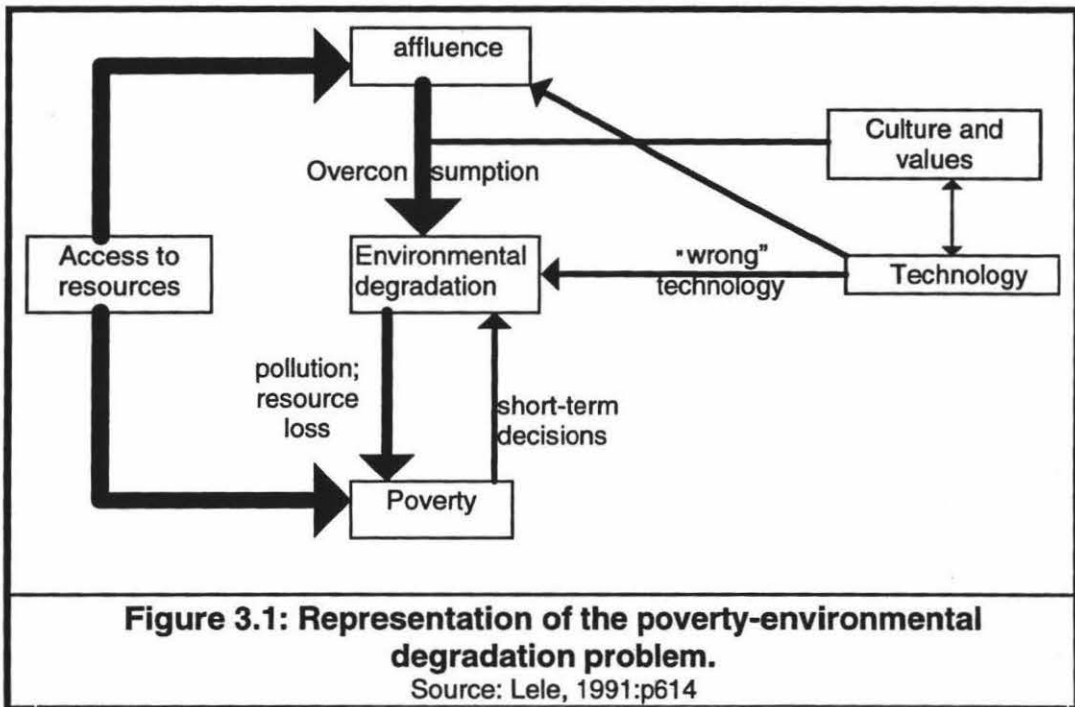
Questions concerning poverty and environment must be set within the context of the wider global economic and political structures. This requires us to ask the question of why people are poor to the extent that they degrade the environment upon which their livelihoods depend?.

Structural Poverty, Environment and Livelihoods

Redclift (1984, 1987, Redclift and Sage,1994) suggests that the causes of poverty in the Third World are to a large extent structurally determined by the processes of development and underdevelopment which operate at a global level. Much development in the third world has been oriented towards agricultural and industrial production for global markets, and the importation of technology and organisational structures to meet these

ends. This 'Northernisation' of economies in the South has not, to a large extent, had the desired result of increasing welfare in these countries. The effect has indeed been the opposite, with the increasing agglomeration of land ownership and polarisation of accumulation, both within countries, and internationally through the penetration of global capital into economies in the South.

In this respect the focus on growth, and free trade as a mechanism for promoting growth, as opposed to 'development' in a broader sense, has not only worked to increase the impoverishment of large sections of the population in the South, but also increased pressure on environmental resources, as the poor are forced to eke out a living from even more marginal lands.

The promotion of industrial and agricultural growth has also worked to increase indebtedness of countries in the South, which exacerbates the situation of poverty and environmental decline in these countries, as they are forced to orient greater proportions of productive resources to international markets in order to meet debt repayments (Redclift,1994:56-57; George,1986:20).

The process of increasing commoditisation of local rural economies to meet the consumption demands of the North and urban elites in the South, provides the basis for both livelihood insecurity and environmental decline in rural areas. The problem for sustainable livelihoods, then, is how to promote these in the face of global structures of accumulation and resource use which work in opposition to increasing livelihood security. Thus when concerned with poverty and environmental decline in the Third World, responses need not only to be focused at the physical manifestations of these, but also the structural causes of them at the global level.

LIVELIHOODS: ANALYTICAL FRAMEWORK

As has been noted, a livelihood consists, at a simple level, of access to resources with which to contrive a living. An immediate thought when considering a living is that we are talking about a purely economic concept. As Sen has noted, however, the central theme in understanding the concept of a 'living' is the complexity of methods used by people, particularly in the rural third World, to derive even the most basic living (Sen,1987:1-2). These methods, economic and otherwise, provide the basic analytical component of a livelihood.

Sen distinguishes between two basic determinants of a living which form part of a sequence of 'events', the end result of which is the 'utility' of a living (see Figure 3.2). These are 'functionings' and 'capabilities':

Functionings refer to those acts which a person actually does. It is in effect an actual state of being and doing in the context of leading a life. These may include adequate nourishment, health, life expectancy and, more complex, achieving self-respect and social integration.

Capabilities represent the physical ability to achieve and maintain these functionings, for example the *ability* to be adequately nourished and clothed (Sen, 1993:31).

In essence, capabilities represent the choices an individual has; they represent 'notions of freedom' for an individual to exploit opportunities which they may have to contrive a living. Functionings, on the other hand, represent the outcomes of the decisions an individual makes as a result of those choices. They are more specifically relevant to the standard of living which an individual may have: the actual reality of their state of being. Individual functionings, therefore, are dependent upon the capabilities which an individual has, and the weight they ascribe to each one in the decision making process which results in a living (Sen, 1987:36).

Sen uses the following example to illustrate the concepts of capabilities and functionings:

> Consider a good, e.g. rice. The utilitarian will be concerned with the fact that the good in question creates utility through its consumption. And indeed, so it does. But that is not the only thing it does. It can also give the person nutrition. Owning some rice gives the person the capability of meeting some of his or her nutritional requirements [the meeting of which is a functioning] (Sen, 1984:315).

Figure 3.2 represents these two basic determinants as part of the complete sequence of gaining a living. The capabilities of an individual are the result of the material characteristics (for example, nutritional value) derived from market goods, and those 'goods' derived directly from the environment (for example, clean air and the absence of oppressive structures such as crime which impact on an individuals freedom to act). Capabilities are also influenced by the personal characteristics of an individual, which may include their personal metabolic rate, the range of skills they have, or indeed whether they are male or female.

Figure 3.2.: Utility, functionings, capabilities and their sources
Source: Muellbauer, 1987:40
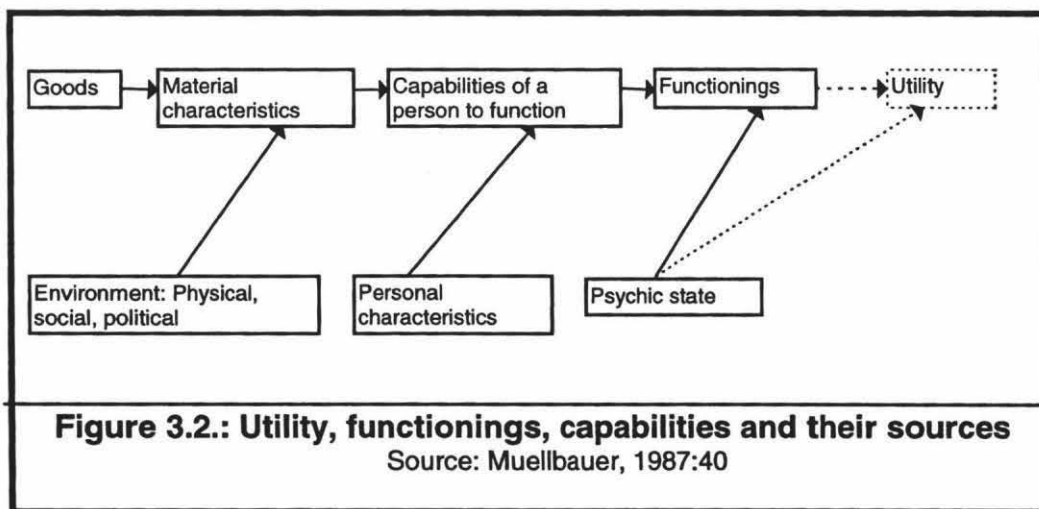
The capablities of an individual in turn determine the range of functionings that are open to them, or the actual achievements they are able to attain in deriving a living. The psychic state of an individual (for example, their religious beliefs) also influences the actions they undertake. Functionings

and psychic state subsequently contribute to the utility of a living, that is the desirable result of the sequence, which may be defined variously as happiness or pleasure, satisfaction, maximum health, a particular mental state, a certain level of wealth and so on. The difficulty in defining the utility of a living leads Sen to declare that utility should not be taken as a definition of the standard of living, or the object of value. It is the set of available capabilities of an individual which in fact determine the relative value of a living (Muellbauer,1987:40-41).

Capabilities, then, become a central component in the concept of sustainable livelihoods. The functioning component of a living is synonymous with an individual having a secure and sustainable livelihood, but this is in turn dependent upon their capability to attain this. Chambers and Conway (1992:5) suggest that livelihood capabilities are a subset of Sen's broader conceptualisation of capabilities, and include the ability to cope with stress and shocks and to find and exploit livelihood opportunities.

Additional to capabilities, in the conceptualisation of sustainable livelihoods as advocated by the Food 2000 report, are the notions of equity and sustainability. Equity refers to the 'less unequal distribution of assets, capabilities and opportunities and especially enhancement of the most deprived' (Chambers and Conway,1992:6). Sustainability in a livelihood context has two dimensions: environmentally it refers to the maintenance of ecological processes and the stock of natural resources, and specifically long-term self-restraint and self-reliance in the process of deriving a livelihood. Socially, a sustainable livelihood is one which is able to be maintained and improved in terms of the set of individual capabilities and at the same time 'maintaining and enhancing local and global assets and capabilities on which livelihoods depend' (Chambers and Conway, 1992:6).

In this respect Chambers and Conway (1992:7) define a sustainable livelihood as:

> ...the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with stress and shocks, maintain or enhance its capabilities and assets, and provide livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term.

At a basic level, then, a livelihood comprises the interaction between four components: people, and the capabilities they have; the activities they undertake to produce a livelihood; the assets at their disposal; and the gains from the activities which they undertake. This 'livelihood system' is shown diagramatically in Figure 3.3.

Figure 3.3: Components and flows in a livelihood
Source: Chambers and Conway, 1992:10.
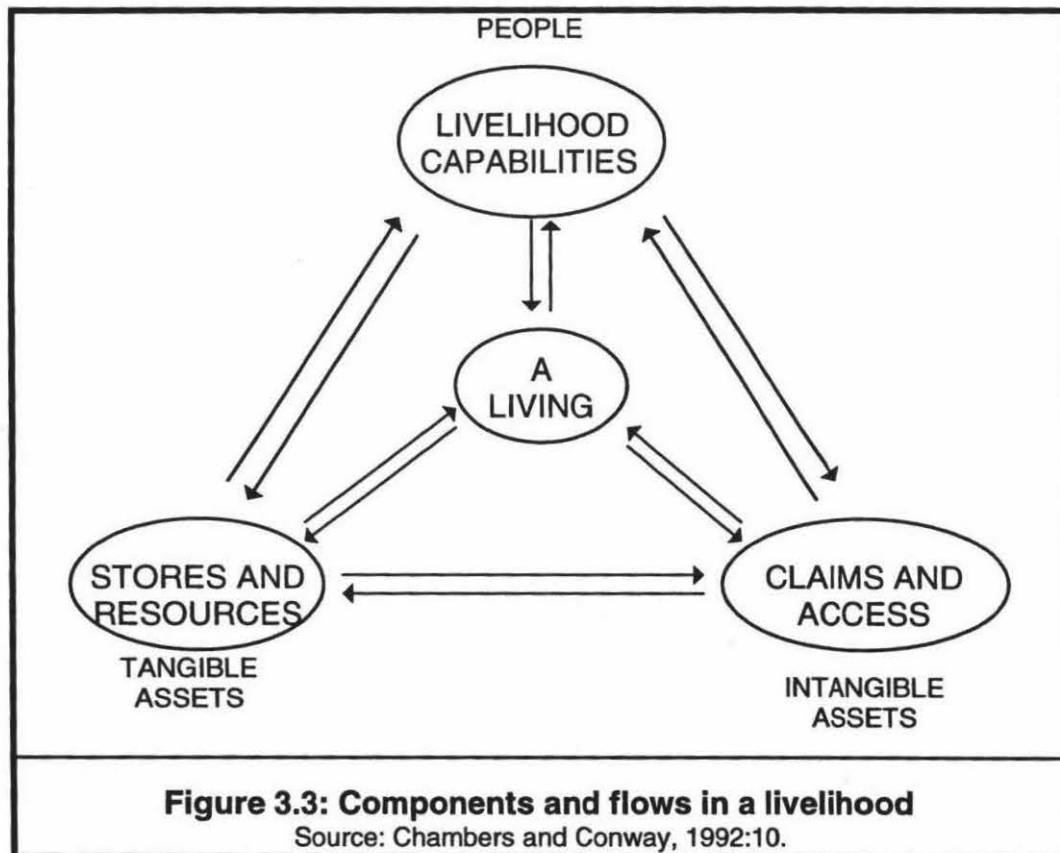
The reality of people's livelihoods can be influenced by a number of factors, including the specificity of local social, economic, political and ecological environments, accident of birth, gender, level of education, health, and choice. These may all act, in differing degrees, to determine

the livelihood capabilities which an individual may have, the stores and access to resources they have and the functionings (activities) they may undertake. The four component parts of a livelihood (Figure 3.3) also influence each other to determine the form they take. For example, the livelihood capabilities which an individual has will be determined by, and will also determine, the range of claims and access, or stores and resources available to their livelihood strategy.

Miyauchi (n.d.:19) also suggests that livelihood strategies may be affected by internal and external influences (presented in Figure 3.4) which condition the nature of the strategy by influencing the capabilities and assets available to that strategy.

Figure 3.4: Livelihood Strategy under various influences
Source: After Miyauchi,(n.d.):19.
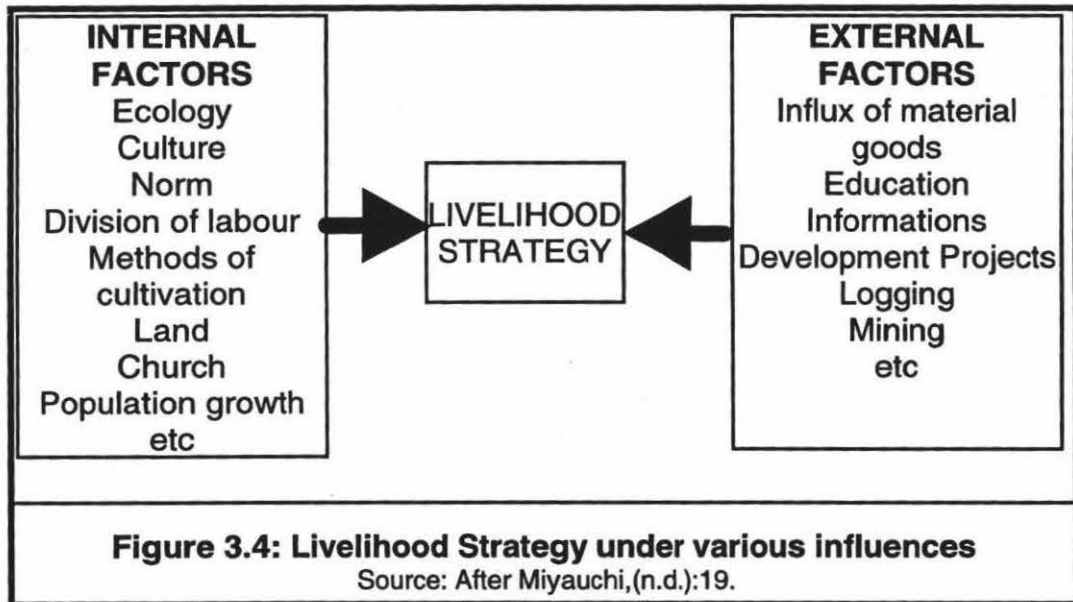
As Figure 3.3 shows, Chambers and Conway differentiate between tangible assets (store and resources), and intangible assets (claims and access). Tangibles may include land, water, food stocks, trees, livestock, and stores of value such as money, gold and jewellery. Intangibles include claims which can be made for material, practical and/or moral support from family, relatives, and/or other members of the community; and access which is the opportunity, or freedom, to actually use a resource, store or service (Chambers and Conway,1992:9-11).

By using their capabilities to act upon the stores and resources to which they have claims and access individuals, or groups of individuals (e.g. households), are able to contrive a livelihood. The capabilities and assets which they have will vary between individuals and groups, and, as is often the case, will comprise a portfolio of both which they are able to use in particular times and places depending on need and the relative effects of internal and external influences over time.

THE SUSTAINABILITY OF LIVELIHOODS.

The sustainability of livelihoods is concerned with two inter-related dimensions. The environmental dimension refers to the impact of livelihoods on both the local and global environment; and the social dimension to the ability of an individual or household to produce and maintain a livelihood over time.

ENVIRONMENTAL SUSTAINABILITY

An environmentally sustainable livelihood strategy is, simply, one which maintains or enhances the local resource base over time. The emphasis is on the activities which comprise the strategy and their net effect on local resources. The environmental impact of a livelihood strategy may be negative: it may contribute to deforestation, desertification, soil erosion, and water quality and quantity. Or it may be positive: it actively or passively maintains and/or improves local renewable resources such as water, soil fertility and air quality (Chambers and Conway, 1992:13).

Although in the first instance the concept of sustainable livelihoods is concerned with the maintenance of livelihoods at the local level, it is also concerned with the relationship between livelihoods at different locations. Livelihoods, therefore may also impact upon global sustainability, in that they may add to global environmental processes such as global warming through greenhouse gas emission and pollution. This produces a global

dimension to livelihood sustainability which ensures that a livelihood is not sustainable at the expense of other livelihoods, or general global livelihood sustainability.

The environmental sustainability of a livelihood can thus be viewed simply as the net effect of a livelihood strategy on the environmental sustainability of other livelihoods at both the local and global levels. If a livelihood degrades the local environment or contributes to global environmental problems, then other livelihoods suffer a decreased stock of natural resources, and as such their sustainability is jeopardised.

Reference has so far been made to the tangible assets of a livelihood, such as local natural resources. As Chambers and Conway (1992:13) suggest, however, the environmental sustainability of livelihoods is also necessarily concerned with the intangible assets of livelihood strategies. These refer to the claims and access people have to resources they require for their livelihoods. In this respect a livelihood is unsustainable if it affects in a negative way the claims and access of other livelihoods; or, if these are affected by processes outside the control of people as they attemp to construct a livelihood. These processes include, at the local level, encroachment or appropriation by the state (bureaucratic and legal barriers) or by powerful interests. At the global level, international trade and/or other agreements may work to negatively influence the claims and access of people to common property resources necessary for their livelihood.

SOCIAL SUSTAINABILITY

The social sustainability of a livelihood refers to an individual's or group's ability to react positively to stress and shocks that affect their livelihood, to maintain and enhance their capabilities, adapt to and exploit new conditions and assure the continuity of the livelihood strategy over time (Chambers and Conway,1992:14).

Stresses and Shocks

Stresses are those negative influences on a livelihood which occur gradually, and are continuing and cumulative, such as changing climatic conditions, population pressures, seasonal shortages and declining resources. They may be long or short term, one-off or cyclical. Shocks, in contrast, are those influences which occur suddenly, such as floods, fires and epidemics, and tend to be traumatic and unpredictable (Chambers and Conway,1992:14).

Strategies for coping with stresses and shocks are an important and integral subset of livelihood capabilities. Those livelihood strategies which prove to be the most sustainable are characterised by a diversity of activities and enterprises which at different times, and to differing degrees, work to maintain the livelihood (Bernstein, 1992:23). People employ a range of strategies to deal with shocks and stresses and these may include stinting on consumption; depletion of stores of food and other assets, making claims on relatives, family, government, and other support agencies, seeking other sources of food such as wild-foods; working for income; and, by moving to other areas in search of food or income or both (Chambers and Conway,1992:15-16). In this respect a diverse range of capabilities, assets and rights to claim and access resources are a necessary component of the social sustainability of a livelihood, and livelihood security in general.

Capability Enhancement and Adaptation

Social, economic and environmental systems are not static entities, but are in a constant state of flux. Livelihoods which are sustainable must be able to adapt to changing conditions, and seek out and exploit new opportunities as they arise, or as is necessary. In this respect an essential livelihood capability is experimentation and adaptability. Individuals must also be able to make links with other livelihoods, to exchange information, and to innovate new methods. An essential characteristic of a sustainable

livelihood, therefore, is that it must be dynamic in meeting challenges and changing conditions (Chambers and Conway,1992:17). As Sen suggests, some notion of freedom is an important aspect of the capabilities available to derive a living. An individual should not only have the ability to adapt and enhance their capabilities, but the freedom to apply these to both attain valued functionings, and respond to changing conditions (Sen,1993:33-34).

In this respect a sustainable livelihood will exhibit a dynamic relationship with the local, and possibly wider, social, economic and environmental context in which it exists. The ability of an individual or social group to diversify and expand their capabilities is an integral component of livelihood strategies the world over, but is perhaps more important in those places experiencing rapid change, such as is the case with developing areas. Consequently, an essential component of sustainable livelihood development strategies should be to ensure the continued dynamicism of local livelihoods.

Intergenerational Sustainability

The intergenerational social sustainability of livelihoods is concerned primarily with the transfer of livelihood capabilities over time. This means that the capabilities of one generation must be equal to, or improved upon the capabilities of the generation preceding it. Maintenance requires that capabilities - knowledge, assets and skills - be passed from generation to generation. Enhancement requires some degree of education or training to improve upon the existing stock of capabilities, or to allow the next generation to attain differing capabilities, and therefore the ability to employ alternative livelihood strategies, or to move into different occupations in different places.

The necessity of intergenerational sustainability, and particularly the enhancement of capabilities is made more important in those areas where

population pressure and land scarcity place pressure on existing livelihood strategies. If, due to internal or external factors, traditional capabilities become inadequate to both provide a livelihood and/or ensure continued social and environmental sustainability, then the development of alternative capabilites becomes a prerequisite for continued sustainability.

Livelihood Security

Perhaps the central aspect of ensuring a livelihood's sustainability is ensuring its security. In this respect a fundamental operational component of the 'sustainable livelihood security' advocated by the Food 2000 Report is ensuring that livelihoods are not vulnerable to negative pressures from *outside* the local context, and from changing conditions *inside* the local context. The level of vulnerability of a livelihood is directly related to its sustainability, but more specifically to its social sustainability. If it is able to cope with stress and shocks, be replicated and enhanced over time and space, ensure the integrity of the physical resource base and be maintained within a specific but ever-changing social, political and economic environment, then it can be said to be secure.

Each of the these factors can independently or collectively work to increase the vulnerability of a livelihood. The key determinant, however, in understanding vulnerability is the uncertainty with which changes in the physical, social, and economic environment occur, and the strategies which people have to cope with them (Chambers,1995:20-21). To avoid vulnerability and uncertainty people make use of a diverse portfolio of capabilities, tangible and intangible assets, and coping strategies (Chambers and Conway,1992:16). In this respect, livelihood security is the result of the sum of the various aspects of livelihood sustainability: a break down in one aspect of sustainability will result in a decrease in security. As Sen points out, there must be an element of freedom for individuals to employ their capabilities within the confines of social arrangements and personal characteristics (Sen,1993:33-34). In this respect it is arguable

that a factor in the security of livelihoods is a range of choices and the freedom to choose between them, which in turn relates directly to the concept of social sustainabilitiy mentioned above.

Chambers demonstrates this point by using the proverb of Archilochus who said that: 'the Fox has many ideas but the hedgehog has one big idea'. Employees in the industrial world may be equated with the hedgehog with a single source of support. If this fails they must rely on savings or welfare from the state or other agencies. Most poor people in the South are, by necessity, foxes with many sources of support; they have neither the benefit of savings or the security of knowing that the state will help out (Chambers,1995:23).

Sustainability, therefore, provides the key integrative component within sustainable livelihoods for achieving sustainable development. Social sustainability, however, in ensuring that livelihoods are stable, provides a necessary prerequisite for environmental sustainability. As we shall see, by increasing the security, and thereby decreasing the vulnerability of livelihoods, we are in fact providing a platform from which sustainable land-use practices and further resource management can begin. The sustainability of livelihoods is, however, dependent upon a range of interdependent factors which exist both within the livelihood itself, and outside in the form of stresses, shocks, and influential processes and structures. The key to a sustainable livelihood, therefore, is not merely to ensure that people are able to derive a living from their immediate environment, using the capabilities that they have, but also to ensure that they are able to meet contingencies positively and with confidence.

In the context of an increasingly integrated global economy, the analysis of livelihoods cannot be divorced from the broader social, political and economic environment. Given the nature of the development process outlined in chapter two, local livelihoods will be increasingly influenced, often in a negative way, by processes which occur at a national and global

level. This suggests that a sustainable livelihoods approach to sustainable development will entail the development of livelihoods themselves in order to meet new problems which result from that integration. The question this poses is whether a sustainable livelihoods approach necessarily means a new approach to development.

SUSTAINABLE LIVELIHOODS: APPROACHES, PROBLEMS AND POTENTIALs

As suggested by the Food 2000 Report to the WCED, the concept of sustainable livelihood security presents a new analysis of the environment and development 'problem': 'This new analysis starts with the poor in the cause and effect linkage, where they are, what they have' (Food 2000,1987:3). Essentially this echoes the First-Last thesis presented by Robert Chambers in 1983. Chambers suggested that because much of the analytical work on environment and development, and to a certain extent the practice of development as well, was carried out by development 'professionals' from outside the locale of research and action, it consequently suffered from a number of biases associated with what he calls the 'normal professionalism of Development Studies' (Chambers,1983:13-23;1993:3)(see chapter two).

Both the methods for collecting data on environmental and developmental problems, and the prescriptions for change that analysis of this data provided, were inherently biased towards the values and knowledge systems of outside researchers and practitioners. The local needs of people, their locally specific realities and their own expert knowledge were denigrated in favour of 'expert' knowledge from outside.

The challenge for the 'new analysis' is to seek and construct the realities of people as they experience them, and find solutions to problems, as they see them, which incorporate these realities. This signifies a bottom-up approach to the analysis of livelihoods (and indeed sustainable livelihood

security as a development method and goal), which necessarily implies the maximum possible participation of local people (Chambers,1987,1988,1993,1995;Johnson,1992:274; Rahman,1993:205). The emphasis is on off-setting the biases of outside development workers and the influences of the state and other 'outside' agencies, to ensure that local people, and particularly the poor, have access to adequate resources with which to at least maintain their livelihoods.

In a discussion paper concerning poverty and livelihoods, Chambers presented a challenge to all development professionals by asking the questions: 'whose reality counts? The reality of the few in centres of power? or the reality of the many poor at the periphery?' (Chambers,1995:1).

Dharam Ghai has also echoed these sentiments by stating that:

> ...programmes and projects concerned with conservation and sustainable development will only succeed on any scale when they address the social factors influencing the way people interact with the environment (Ghai,1994:2).

The implication is that the analysis of livelihoods necessarily begins with local people: the situations they face, their needs, and the strategies they employ to contrive a livelihood and cope with adversity. A livelihood is not simply a series of economic processes and events, but includes social relationships, local knowledge systems and resource management systems which interact in complex and diverse ways to provide a living (Chambers,1995:23; Ghai,1994:1). As Bernstein (1992:24) suggests, analysis of the livelihoods of rural people involves asking questions such as:

1) Who owns what? (or has access to what?)

2) Who does what?

3) Who gets what?

4) What do they do with it?

These questions imply more than may at first be apparent. They deal with the social relations which govern the ownership and distribution of resources and other means of production; the divisions of labour within a community or household; distribution of income; and whether this income is consumed or accumulated (ibid.:25). Bernstein suggests that the social relations which determine the answers to these questions are equally important to, if not more important than, the economic terms they imply. He suggests that considering the social relations of livelihoods by asking 'whose livelihoods?' we are reminded that:

> ...economic inequalities typically incorporate and express social, cultural, political and institutional inequalities as well.

And:

> The larger picture includes the class and gender relations, divisions of labour, markets and linkages of specific agrarian structures or particular national economies, as well as the international economy (Bernstein,1993:25).

With this in mind, the analysis of livelihoods, while obviously a local level undertaking, cannot be divorced entirely from the broader processes which occur at the national and global levels.

The concept of vulnerability, which as we have seen is central to the sustainability and security of livelihoods, is a physical manifestation of these broader processes, and specifically those concerning development and underdevelopment (Goulet,1971:38). The problem remains how to ensure sustainable livelihood security in the context of broader processes which work against this goal.

The measurement and analysis of livelihoods and their sustainability is made difficult by the non-quantifiable nature of their components. As Chambers and Conway suggest, however, part of the problem of the 'old analysis' of reduction, standardisation and survey measurement, was that it failed to recognise the richness, fluidity and diversity of the reality of people's lives (Chambers and Conway, 1992:25). This suggests that

sustainable livelihoods as a developmental and environmental objective require a different approach.

By making local people the starting point of development theory and practice, we are in effect questioning the belief that large-scale development programmes and projects can provide the necessary basis for increased human welfare. The central argument for putting people first, is that only by recognising that a myriad of local level problems requires a myriad of local level responses can we provide a basic level of welfare upon which broader sustainable development strategies may be implemented, and can indeed succeed.

SUMMARY

This chapter has presented the theory of sustainable livelihoods as a concept which has been forwarded as a means by which the environment/development contradiction may be solved at the local level. By making local people, and particularly the reality of their existence, the focus of 'development' initiatives, it is suggested that the twin dilemmas of development as increasing resource use, and sustainability as increasing resource conservation can be solved.

The emphasis within the concept of sustainable livelihoods is on enhancing and securing livelihood strategies as they already exist, to ensure a stable basis from which to ensure continued sustainable resource management and poverty alleviation. Securing and enhancing existing conditions, however, suggests a different approach to development from that outlined in Chapter two. The focus of development becomes one of securing local level system dynamics rather than imposing outside formulas for structural alteration.

SECTION ONE: CONCLUSION

SUSTAINABLE DEVELOPMENT AND LIVELIHOODS: CONVERGENCE OR CONFLICT?

We have seen that sustainable development provides a framework for development policy at the global level. Although widely accepted, the concept is not without controversy, and is seen by some authors as nothing more than the incorporation of environmental concerns into the standard growth model of development. Livelihoods, on the other hand, necessarily entail a concern for individual welfare at the local level, in order to provide a platform for further development, and at the same time ensure environmental conservation. Given these two apparently conflicting goals, what does sustainable livelihood security mean for the theory of sustainable development?

Utting, in writing on the nexus of conservation/development strategies and local livelihoods, raises the concern that not only may development impinge on the security of livelihoods, but conservation programmes may also have a negative impact on these. He suggests that the promotion of sustainable development has tended to focus on the 'trade-off between economic growth or 'modernization', and social marginalization and environmental degradation affecting both present and future generations' (Utting,1994:232). Utting suggests that there needs to be more attention paid to the trade-off between environmental protection and human welfare. There are two basic problems with respect to the minimization of this trade-off:

> * the failure to locate environmental protection initiatives within a coherent development policy framework -- what might be called a problem *of macro-coherency*; and,

> * the failure to integrate concerns for environmental protection with those relating to the rights, needs and priorities of local people -- what might be called a problem of *micro-coherency* (Utting,1994:232).

Sustainable development projects and programmes which involve some degree of conservation are thus susceptible to failure if they do not occur within a national policy framework which supports their success. At the local level they may prove worthless if they do not take into account the social context within which they must both be implemented and continue to operate.

In this respect the sectoral nature of state planning, and in some respects the contradictory nature of national policies, have the effect of promoting both conservation of resources at one level, and increasing industrial, agro-commercial and infrastructural development activity at another level (Utting,1994:242).

At the local level, development and conservation initiatives can act as a threat to local livelihoods if they do not take into account the social, economic, cultural and land tenure situation of local people (ibid:245). Effective and sustainable conservation and development projects and programmes therefore require intensive dialogue with local people, to identify their needs and the stock of local knowledge of resources and resource use. The identification of potential conflicts and resolutions, the possible responses of local people to the effects of the project, and the alternative livelihood strategies available to local people form an important link between development policy at the national and global levels, and their implementation at the local level (Utting,1994:246).

In this respect, although sustainable livelihoods may provide a mechanism for integrating environmental and developmental objectives at the local level, livelihoods cannot be divorced entirely from wider processes which work to guarantee their success or failure. The necessity of addressing the problems of macro- and micro-coherency, as suggested above, implies that a purely economic growth formula for decreasing poverty and environmental decline may prove fruitless in the both the short and long terms. If the links between macro development strategies and micro

livelihood strategies are not taken into account then both may prove to be unsustainable. As has been suggested, however, these links are complex and diverse, and do not necessarily operate in a cause and effect manner. The effective implementation of sustainable development strategies can be seen to be dependent upon ensuring secure and sustainable livelihoods, but at the same time these are dependent upon national and global policy development to ensure success. Once again, just as sustainable development reduces down to a political problem, so too do livelihoods.

In effect, then, a sustainable livelihoods approach at the local level entails a reorientation of policy at the global level (and by association at the national level as well). In this respect, in theoretical terms at least, the concept of sustainable development as it has evolved and been embraced at the global level, may prove as unsupportive of local livelihoods as mainstream development practice before it. This suggests that if development thinking and theory is focused at the local level, to promote sustainable resource management and ensure secure livelihoods to alleviate poverty and vulnerability, then action needs to be taken at the global political level to provide a coherent policy framework within which this may occur.

The question which this argument poses is how do sustainable development projects and local livelihoods compliment each other at the local, practical, level, and how can development projects be designed to ensure that livelihoods are, and remain, sustainable in the context of global structures. Part two of this thesis intends to look at the micro-coherency problem of the inter-relationship between sustainable development and livelihoods at the local level. The focus is on how a sustainable development project, as a manifestation of global development thinking, supports or undermines the local livelihoods of people. The central question is what are the implications of an analysis of

livelihoods for the practice of sustainable development, and is a reorientation of this practice necessary as the theory suggests.

CHAPTER FOUR

RESEARCHING CONTEXTS AND
CONTEXTS OF RESEARCH

INTRODUCTION

The focus of this research is on the relationship between a sustainable development project, as a manifestation of Western developmental and environmental theory, and the reality of local livelihoods within the boundaries of that project. Central to this focus is the question of whether a sustainable development project complements, supports and enhances local livelihoods, and if not, why not? At a broader conceptual level this research also attempts to determine whether the sustainable livelihoods approach to development and environment necessarily implies a reorientation of the way development is undertaken at the local level.

As was suggested in chapter three, it is perhaps imprudent to attempt an analysis of livelihoods in seclusion from broader national, regional and global structures and policies. Although the focus of this research is on local level livelihoods within the context of the proposed World Heritage site at East Rennell in Solomon Islands, these are situated within the wider context of an increasingly integrated national economy which, in turn, is becoming increasingly integrated into the global economy.

Additionally, livelihoods are not a solely economic phenomenon, and economic integration is but one process which operates at various spatial scales to influence these. Forces of social, cultural and environmental change which also operate at the global, national and local scales, will influence the nature and viability of livelihoods which must be sought in, and adapt to continually changing socio-cultural and physical environments. The decreasing importance of traditional kinship ties,

changing aspirations, rural-urban migration, the reverse filtration of western consumer values to rural areas, and increasing economic and social inequality within communities and nations, are a number of such processes which may impact on local livelihoods.

The objective of this chapter is to provide an introduction to the contexts within which this present research into local livelihoods is situated, and the methods by which this analysis is undertaken. The emphasis is, firstly, on presenting a regional and national context within which developmental and conservationist objectives are aimed for and achieved in the Pacific, and more specifically Solomon Islands. The constraints and opportunities which these contexts present to achieving both sustainable development and sustainable livelihoods are also outlined.

Secondly, the Participatory Rural Appraisal (PRA) methodology used to investigate livelihoods at East Rennell is outlined. This methodology has been referred to as a family of methods and approaches to local level analysis, planning, action, and learning 'by, with and from rural people' (Chambers,1994a:953), and represents an alternative to more mainstream survey methods.

Because the concept of livelihoods represents a 'new analysis' of problems of environment and development at the local level (Food 2000,1987:2-3;see chapter three), it is suggested here that this necessarily implies an alternative approach to the research of livelihoods. When approaching livelihoods, PRA provides an appropriate methodology for exposing the complexity and diversity of strategies which local people employ to gain a living by permitting local people themselves to actively take part in the research process.

THE PACIFIC REGIONAL CONTEXT

In attempting to implement developmental and environmental policies, the Pacific islands present a unique and challenging context within which to work. Perhaps the key characteristic of this region is the diversity of local contexts presented within a common oceanic environment (Piddington,1985:7). The diversity of these contexts, including physical, economic, cultural and linguistic differences makes it difficult to generalize about Pacific development. As Piddington further suggests, however, most island economies possess features of dependence and vulnerability which place them in a disadvantageous position with respect to larger and less isolated developing countries (Piddington,1985:9).

Agriculture is often seen as the keystone of Pacific Island economies, in part a result of the importance of subsistence agriculture within them (Ward,1985:19). In this respect land is central to the lives of many Pacific Islanders for the simple fact that for a great many of them the land *is* their life. Land provides not merely the means of physical sustenance, in the form of subsistance produce, but also provides the basis of spiritual and social life as well (Glick, quoted by Crocombe,1994:17; Fairbairn,1985,57).

As Pacific Island countries have sought to move further along an economic development path the commercial importance of exploitable resources, including land, has increased. This necessarily places increasing pressure on these resources and the systems of tenure which determine their use, towards more readily exploitable and codified forms. The relative size and resource endowment of individual island nations within the region, as well as their internal capacity for resource exploitation, has played an important role in determining the potentials for this type of development. In this respect Ward (1985:19) differentiates between the larger Melanesian states such as Papua New Guinea, Solomon Islands, Fiji and New Caledonia/Kanaky on the one hand, and

the smaller and less resource rich Polynesian and Micronesian states on the other.

Small atoll states in particular, such as Kiribati, Tuvalu and Tokelau, present specific constaints of size, isolation and proneness to natural disasters which make conventional approaches to development less applicable (Connell,1988:2; Briguglio,1995:1615). The relative cost of implementing and maintaining development projects, particularly infrastructural development on small, scattered and often isolated islands, makes it difficult for governments to initiate these without outside assistance. In relation to this Bertram and Watters suggest that in many cases the development of these smaller states necessarily entails the interaction of four factors: migration, remittances, aid and bureaucracy, to form a specific class of economy refered to as a MIRAB economy. (Bertram and Watters,1985:497-500). Connell goes so far as to suggest that:

> the much vaunted comparative advantage [of Pacific Island economies] lies not in the conventional economic spheres of cheap labour, copra production etc. but in the ability to attract aid and other concessionary finance (which includes remittances from international migration) (Connell,1988:86).

Larger Pacific nations, however, do have a limited range of primary resources, the extraction of which may be used to promote development on a local and national scale. Forest and mineral resources in particular provide valuable income and foreign exchange for countries such as Papua New Guinea, Solomon Islands and New Caledonia (Henderson et al, 1990:83). There is a tendency, however, for the larger Pacific nations to be characterised by an internal diversity of local culture and language which makes social cohesion and the promotion of a common goal of national economic development all the more difficult (Connell,1988:4). Perhaps the most commonly cited example of this is the current situation on Bougainville in Papua New Guinea (Henningham and May,1992:1).

Island states in the Pacific, then, must confront a number of constraints to continued economic, and other development. Although it has been suggested that these countries, following other developing countries, must trade to promote economic growth and development, the constraints of distance to markets and lack of tradeable commodities makes this difficult and fraught with danger (Connell,1988:2; Fairbairn,1985:110-111). There are, however, a number of opportunities which Pacific Island states are able to exploit in order to increase income.

It has been suggested that fisheries represent the greatest resource potential in the Pacific (Kearney,1985:76), with the Tuna fishery alone said to be worth in the region of 1,000 million dollars (Waugh,1992:170). Although largely controlled by Pacific island nations, with the acceptance of their jurisdiction in exclusive economic zones, this resource is largely exploited by distant water fishing nations such as Japan, Korea, Taiwan, Russia and the United States (ibid.,170). Nevertheless, the current income from licences and the potential for an increased catch represents an area of high development potential.

Tourism, as an area of present and potential development, attracts both supporters and critics. The Pacific is already widely promoted as a tourist destination, particularly Fiji, the Cook Islands and French Polynesia. The general perception of the region, or that presented by tourism advertising, is of an area of unspoilt coral atolls, white sandy beaches and a warm climate, attributes which are readily exploited by tourism operators.

As a development mechanism, tourism is promoted on the grounds of its perceived economic benefits, which are believed to include increasing foreign exchange and the multiplier effects of this in the domestic economy of the host country, the potential of bringing the consumer to the product rather than the reverse as is the case with other 'export' commodities, the creation of employment, and the potential for the

diversification of a country's economic base (Rajotte,1980:4; Cole and Parry,1986:13).

Alternatively, tourism is often criticized because of its actual and potential social, economic and environmental costs. These include the socio-cultural impacts of the increasing monetisation of society and the subsistence economy, the economic leakages due to foreign investment and control and the need to import commodities to supply tourism, rising expectations of local populations, the availability to local people of only unskilled or semi-skilled positions within the tourism sector, increasing urbanisation as a result of tourism and the resulting stress placed of the provision of services to these growing urban areas (Rajotte,1980:8-9). In some cases the promotion of tourism and investment in infrastructural development has been met with a decrease in the number of arrivals, and is also associated with decreasing environmental quality including the destruction of coral reefs and beaches for building materials, a decline in available water and waste disposal problems (Guthunz and von Kroigk,1996:28-29).

Recently, however, there has been a move within the Pacific to promote ecologically sustainable tourism and eco-tourism as a viable development mechanism. This has in part been due to the recognition that tourism depends on suitable environments for its success (Tisdell, 1994:1), and also the belief that although the Pacific environment represents a unique tourist destination, it is also fragile and in need of conservation and protection. In this respect many Pacific Island countries have become interested in eco-tourism as a means to both promote economic growth and conserve their natural environments.

Given the fragile nature of Pacific environments, there has been a regional level move to promote conservation and sustainable development (Wendt,1992:185). Organisations such as the South Pacific Regional

Environmental Programme (SPREP), the Asia Pacific Economic Cooperation (APEC) organisation and numerous non-governmental organisations (NGOs) have been active in promoting sustainable economic and other development, and conservation and environmental rehabilitation programmes. The preparation of country level National Environmental Management Strategies (NEMS) and country reports for the Rio Conference are perhaps two indications of regional environment and development initiatives in the Pacific.

Thus far we have briefly presented the regional context within which local level development and livelihoods are located. As is perhaps apparent, global level theory and policy has filtered down to the regional level in the Pacific, where strategies are formulated within the specific developmental and environmental constraints present in the region. Many of the points presented here are equally applicable at the national and local levels in Solomon Islands. It is at these levels that specific policy formulations must be developed and implemented both to promote development, in whichever form, and the sustainable utilization and conservation of resources.

SOLOMON ISLANDS: THE NATIONAL CONTEXT

HISTORY

The central theme of this thesis is that, ultimately, development is about people: Who they are; what they have got; and what they need. Because development is a continual process, toward desired goals, it is often the case to begin in the present, and work towards those future goals. Yet just as human concepts have a history which defines their present situation (see chapter two), so too does human reality.

The existence of human populations in Solomon Islands for a period measuring in the thousands of years is testimony to enduring and

sustainable social and economic systems which are environmentally benign (Thaman,1993:49). In this respect the question becomes why the present should require anything other than that which has already proved sustainable in the past? To answer this question, it is necessary to give a brief historical overview to provide a context for the present situation in Solomon Islands.

The exact date of arrival of humans in the Solomons chain is not clear, although archeaological evidence (in the form of Lapita and Plain Ware pottery), and linguistic evidence (both non-Austronesian and Austronesian roots are evident) suggests a transmigration from the North and North-West more than 3000 years ago (Rukia,1989:3-12). Other sources date the human occupation of the Solomons chain even earlier, suggesting that Austronesian speaking proto-Melanesians began to arrive around 4000 BC (Harcombe,1993:11). More recently there is evidence of migration of Polynesians from the East, who inhabited outlying islands between 1200 and 800 years ago. Consequently the ethnic mix of Solomon Islands is the result of long periods of settlement, interspersed with migration both between the islands, and from outside. These migrations have continued in the modern period with the arrival of Chinese, Europeans and other Pacific Islanders to Solomon Islands.

Solomon Islanders have also travelled to other parts of the Pacific and the world. Most notable was the recruitment (often forced or through deception) of people to work in the sugar plantations in Fiji, Queensland and Samoa in the late nineteenth and early twentieth centuries. An estimated 29,000 Solomon Islanders were recruited for this work, a number of whom chose to stay in these countries at the completion of their work to form expatriate communities (Waleanisia,1989:54; Ipo,1989:122; Harcombe,1993:13; Belshaw,1954:19).

Because of the scattered nature of the archipelago, consisting of approximately 1000 islands ranging from large forested volcanic islands to

small coral atolls, and spread over 1.35 million square kilometres of ocean, a diverse range of languages and cultures have developed (Harcombe,1993:16). Today there are approximately 63 officially recognised local languages incorporating 108 different dialects, and three recently introduced languages: English, Pijin, and Gilbertese (Laracy,1989:161-162; Harcombe,1993:38).

Apart from the diversity of language, and the cultural traits specific to each language group, the people of Solomon Islands generally fall into one of two ethnic groupings: Melanesians make up approximately 94 percent of the population and inhabit all of the larger islands; Polynesians, numbering around 13,000, account for four percent of the population and tend to live on smaller outlying islands. The remainder of the population is comprised of Micronesians (primarily from Kiribati), Asians and Europeans.

Like many other Pacific Island countries, the Solomons became a colony during the process of European expansion in the eighteenth and nineteenth centuries. Initially this was under the British and German Governments, and latterly under a solely British administration as the British Solomon Islands Protectorate established in 1893. With British colonial rule eventually came representative government, in the form of a National Parliament, Provincial Governments and Area Councils, and a legal and judicial system based on English Common Law.

Although an imported system, government in the Solomon Islands to a certain extent resembles the traditional structures of power and authority which preceded it. In this respect members of parliament and other government representatives can be associated with the 'big-men' and chiefs of customary leadership. Big-men gained their status as a result of their ability to influence people in their community and had to work hard and perform well to gain this status. This system influences parliamentary elections today whereby candidates are elected according to kinship ties

(*Wantok* ties in the local lingua franca, literally meaning 'one talk', i.e. from the same local language group) and their status in their immediate community, rather than on the basis of party policies (Alasia,1989:137-138).

THE SOLOMON ISLANDS ECONOMY

Until the arrival of Europeans, the economy of Solomon Islands was based purely on subsistence agriculture, with only very limited trade and exchange between groups of non-related communities. The importance of land in this mode of economy, and the absolute necessity of having access to sufficient land for personal needs, gave rise to certain land tenure arrangements which reflected land's basic role in day to day survival. As Crocombe points out:

> Land tenure is shaped by the society it serves, and by external forces. The tenure system, in turn, is also one of the forces which shapes society, in a continuing process of interaction (Crocombe,1994:1).

In this respect, then, land forms not only the basis of economy, but also of society, and particularly in those places where access to land is fundamental to day to day survival as in a subsistence, or semi-subsistence economy such as Solomon Islands.

Figure 4.1: Land-People Relationship in Solomon Islands: Pre-Christian and Modern Periods
Source Maenu'u,1989:30-32
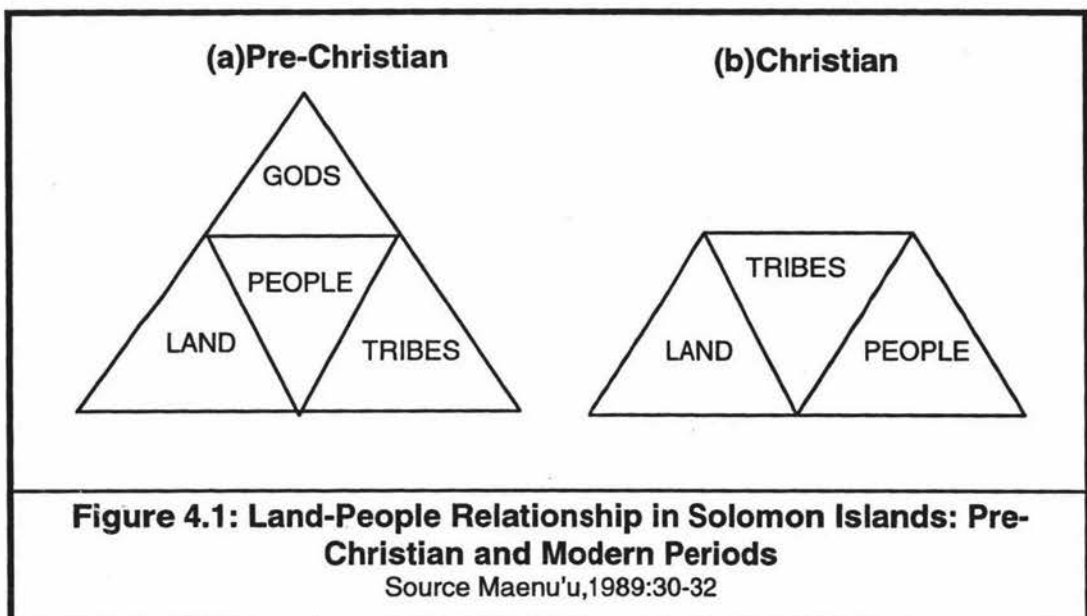
Maenu'u (1989) presents a useful representation of both the traditional and present relationship between people, land and gods in Solomon Islands, reproduced here in Figure 4.1.

Maenu'u suggests that the arrival of Christianity in Solomon Islands, and the subsequent removal of the traditional 'Gods' component of the people-land relationship, has done little to reduce the importance of land in the lives of Solomon Islanders. Where change has occurred, however, is in the nature of the relationship between people, the tribe and land. In this respect, whereas in traditional society there was a form of 'association' between land, gods and people which stressed the dependency of people on land, there increasingly exists a relationship which centres on the 'ownership' of land by people, and particularly ownership by individuals. This is a result of not only the removal of the association of gods with land, but also the slow breakdown of tribal influence in the people-land relationship (Maenu'u,1989:33).

In traditional societies in Solomon Islands, land ownership was held by clans comprised of a number of families claiming descent from a common ancestor. The clan was headed by either an hereditary chief in the case of Polynesian societies, or a big man in the Melanesian case. It was very rarely the case that these chiefs had absolute power over people, but were seen more as central figures in the community. They were, at the same time a figure head, a leader in both custom activities and disputes with other groups, an adjudicator in intra-clan disputes, a source of traditional knowledge, and, in some cases, were seen as a link to the gods. In the case of the Melanesian big men, their continued status was dependent upon them undertaking certain functions such as the redistribution of wealth within the community (Ipo,1989:123).

In terms of land rights, all people had access to land for gardens and houses. In some cases in Solomon Islands, such as on Guadalcanal,

Makira, Santa Isabel, and the Russell Islands (see Map One), land was inherited matrilineally, with an individual's or family's rights being associated with that of their mother's clan. In this instance a male would inherit land rights from his mother's clan, and a woman who joined the clan of her husband would have use rights to this land. In other cases, and particularly (although not solely) on the Polynesian islands of Rennell, Bellona and Tikopia, land 'ownership' was vested in the clan chief who then distributed use rights to individuals. Although the chief was seen as the ultimate possessor of ownership, he could not refuse to give use rights to individuals or families, as all individuals had inalienable rights to land which they inherited, patrilineally, through their father. This was also the case in the Melanesian societies on Choiseul, Malaita, and in the Shortland Islands (Ipo,1989:123).

Land itself was also ascribed status in traditional societies, in that it was seen to have once been inhabited by ancestors, and that the spirits of these ancestors still existed in it. Boundaries of land ownership and use were often delineated by spiritual sites such as burial grounds, and custom stories associated with gods and spirits. In this way land had spiritual meanings which ensured that it was respected and maintained for future generations (ibid.:123).

The social associations with land in Solomon Islands have thus been equally as important as economic associations, particularly in ensuring the continued viability of the economic system. Land tenure arrangements are not, however, static or rigid entities, but change as a reflection of both internal and external forces. Often these changes are independent of any human expectations of outcome or rate of change, and particularly those of governments (Crocombe,1994:2).

The arrival of Europeans in Solomon Islands can be seen as a turning point in the economy of Solomon Islands, and the land tenure arrangements on which it was based. The introduction of Christianity is

one such force which has placed pressure on land tenure arrangements, but so too is the form of economic arrangements which have been imported from outside.

The impact of increasing monetisation of the economy, coupled with an almost universal conversion to Christianity, has been to decrease the importance of these customary associations in favour of purely exchange value associations. In other words, as Belshaw notes:

> The principle motive which gives rise to transactions is material advantage on the one hand and monetary gain on the other, and has no direct or immediate connexion with the maintenance of social ties or the benefit of the community as a whole (Belshaw,1954:27).

The economy of Solomon Islands, then, is today a dual one, although as Belshaw (ibid:25) suggests, one which presents a special case. The maintenance of the subsistence mode is a necessity for a large proportion of the population, particularly in rural areas. Most people, however, have some involvement in the monetary economy either through the sale of cash crops and handicrafts, or through formal employment. Income is often used to purchase consumer items, such as clothing and imported foodstuffs (most commonly white rice from Australia).

The introduction of capitalist modes of production, and the monetisation of the economy has worked to construct an enduring tension between these and the traditional subsistence mode. This has, and continues to place pressure on traditional land tenure arrangements, but also necessitates the modification of imported development models.

In many areas local conflicts occur between those who wish to maintain their land for subsistence crops, and those after quick cash through activities such as logging. People also now recognise the value of land, in a commercial sense at least, more so than they did in the past and this has worked to increase conflict within communities over land ownership and competing uses. It is apparent that as land increases in economic
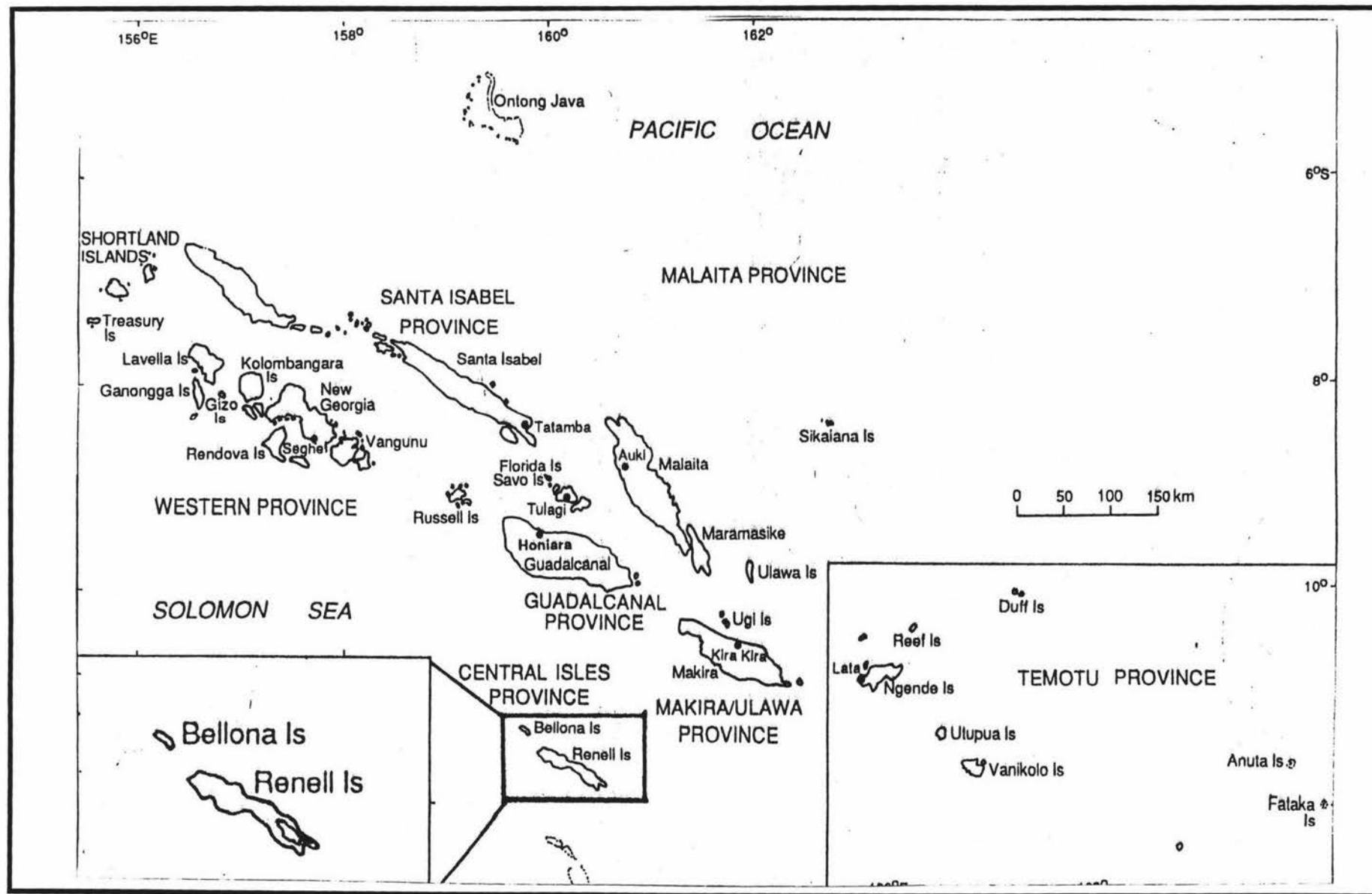
Map One: Solomon Islands
Source: Economic Insights, 1994

value, either as a saleable commodity in itself, or as a source of resources and/or as the location of production, then pressure increases on traditional systems of land tenure towards more rigid codification and registration, and the individualisation of ownership. (Kile,1981:5).

As is the case in many Pacific Islands, the social and economic systems of the Solomon Islands, and the development of, and tensions within these, are closely linked to the issue of land ownership and use (Cole,1994:43). These issues again present a fundamental tension between traditional modes, and alternative, imported modes of land tenure, and production and exchange systems. This situation has, in the past, been exacerbated by colonial governments' lack of understanding and recognition of traditional systems, which led to confusion and conflict between competing modes. The advent of independence has done little to improve this (Maenu'u,1994:85). A central cause of this confusion has been the fact that many customary social and economic 'laws' are codified not in writing but by way of oral traditions. The implantation of a Western, capitalist mode of economy, supported by a Western conceptualisation of law, and with a basic tenet of individual private property, has seen a desire to delimit land ownership to ensure secure investment. The assumption is that only through the indivdualisation and legal codification of land ownership will economic development be able to occur (Lutero,1994:19). Unfortunately, the legal recognition of land ownership has tended to reflect the perceptions of outside observers who have sought to identify individual owners, and as such have ignored or neglected the fact that all people have some degree of use rights to land.

THE CONTEXT OF DEVELOPMENT

The Solomon Islands, like other small island states, faces considerable barriers to development owing to its small size and isolation from export markets. Although resource rich relative to other Pacific Island states,

particularly with respect to land, the standard indicator of economic performance (per capita GNP), shows that the Solomon Islands economy does not compare favourably with its Pacific Island neighbours (see Table 4.1).

	GNP (US$m)	Population (million)	GNP per capita (US$)	Land area (km^2)
Papua New Guinea	2 830	3.80	750	462 840
Fiji	1 130	0.70	1 540	18 270
Kiribati	40	0.06	650	710
Solomon Islands	130	0.30	430	27 990
Tonga	80	0.10	800	720
Vanuatu	120	0.15	820	12 190
Western Samoa	100	0.17	580	2 830

Table 4.1: Economic indicators: selected Pacific Island economies
Source: PDP Australia Ltd. 1991:1

Solomon Islands is dependent upon a small number of exports to provide foreign exchange for the purchase of an increasing variety of imported goods. Tables 4.2 and 4.3 present the value of key exports and imports of Solomon Islands for the period 1986-1993 and 1986-1992 respectively. As the figures presented indicate, Solomon Islands is dependent on the exploitation of primary resources, particularly timber, with very little value added to exports, and the importation of key commodities such as fuels, machinery and manufactured goods.

The growth in exports of timber (almost entirely uncut logs) indicates the recent large scale extraction of this resource which has moved some observers to suggest that at present rates Solomon Islands will be almost totally devoid of forest within twenty years (Economic Insights,1994:10). Although boosting foreign earnings, logging also stimulates private consumption and the need for increased imports, resulting in a negative net

benefit for the Solomon Islands economy, particularly in terms of long-term development investment (ibid.:2-3).

The situation of formal employment in Solomon Islands is similar to that of other Pacific Island nations, with typically high proportions of employees in agriculture and service industries, particularly those associated with the public sector (see Figure 4.2).

Value = SI$'000	1986	1993
Fish	52 928	95 343
Timber	35 727	230 353
Palm oil and kernels	6 023	38 079
Copra	5 951	21 170
Coconut oil	0	4 161
Cocoa	6 472	11 544
Marine shells	1 201	903
Gold	2 219	951
Total exports	111 761	415 953

Table 4.2: Value of key exports: 1986-1993
Source: Economic Insights Pty Ltd 1994

Value = SI$'000	1986	1992
Food	20 969	45 812
Beverages and Tobacco	4 888	9 477
Crude materials inedible	986	3 950
Mineral fuels and related materials	23 614	39 421
Animal and vegetable oils and fats	941	2 360
Chemicals	5 909	15 626
Manufactured goods	19 648	59 564
Machinery and transport equipment	36 920	111 741
Misc. manufactured articles	10 206	33 354
Total imports	125 191	326 609

Table 4.3: Value of key imports: 1986-1992
Source: Economic Insights Pty. Ltd.. 1994

The 1994 Pacific Human Development Report indicates that in Solomon Islands the annual increase in wage employment equals approximately 722 positions. The annual increase in the economically active population for the period 1978-1987, however, equalled 5,500 people, a figure which is projected to increase to 6,600 in the period 1991-2010 (UNDP,1994:17).

These figures indicate the importance of the subsistence sector in Solomon Islands' economy, and subsequently for the livelihoods of the majority of the population. With one of the highest population growth rates in the Pacific (see Table 4.4), Solomon Islands faces the challenge of providing for a steadily increasing population from a subsistence sector on which the majority of people are currently dependent (with approximately 85 per cent living in rural areas (UNDP,1994:20), and a formal sector which is at present unable to keep pace with population growth. The suggestion here is that in the absence of positive and workable strategies to promote economic development in Solomon Islands, alternatives for securing the livelihoods of a growing, dispersed and rural population are required.

Figure 4.2: Employment by sector
Source: PDP Australia Ltd,1991:6
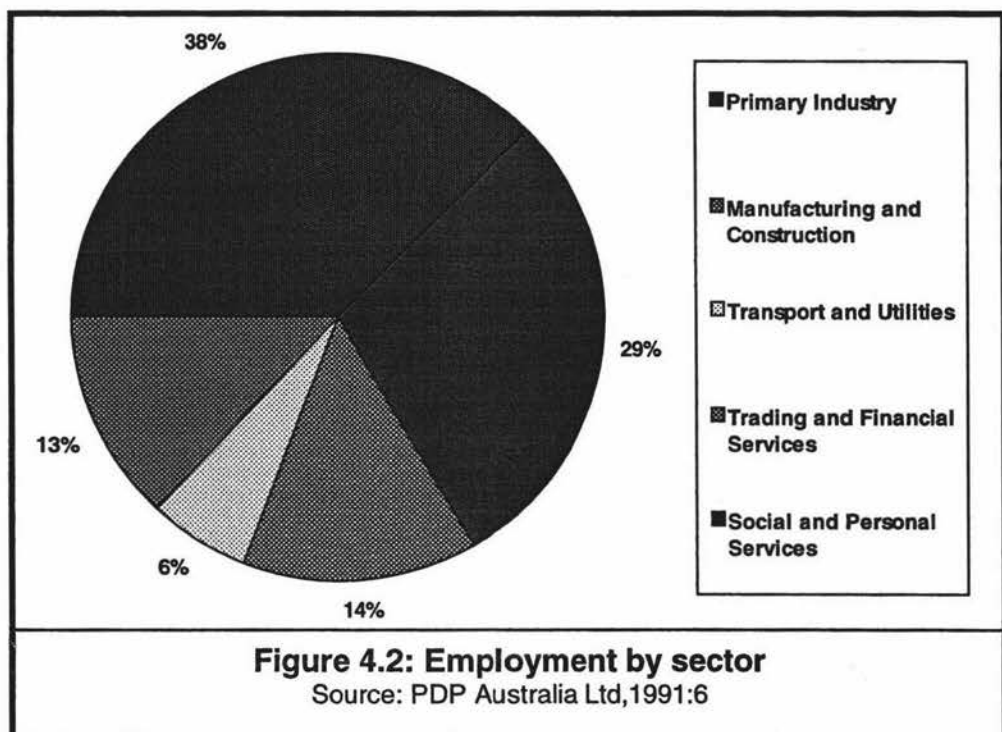
COUNTRY	Population (000s) 1993	Total fertility rate	Annual Population Growth rate 1980s
Cook Islands	18.9	3.5	1.1
FSM	104.8	5.6	3.6
Fiji	761.8	3.2	2.0
Kiribati	76.6	3.8	2.3
Marshall Islands	52.5	7.2	4.2
PNG	3,862.7	5.4	2.3
Solomon Islands	355.4	5.8	3.4
Tonga	97.8	5.2	0.5
Vanuatu	159.6	5.3	2.8
Western Samoa	162.6	4.8	0.5

Table 4.4: Population Statistics: Selected Pacific Island Countries
Source: UNDP.1994

In searching for alternatives to resource extraction as a development approach, Solomon Islands faces similar constraints to other Pacific Island countries, including isolation, cost of international transport, lack of local infrastructure, lack of available land[1] and the risk of malaria. Although the promotion of Solomon Islands as a tourist destination has been seen as one area of potential diversification and development, there is little activity in this area by the government, partly due to lack of funds. In recent years the number of visitor arrivals has remained static, and may even have declined.

INDICATORS OF HUMAN DEVELOPMENT

The Solomon Islands National Development Framework for 1995-1998 lists its five key development objectives as the desire to:

(a) achieve real and tangible economic growth in real capita incomes;

(b) generate job opportunities for Solomon Islands growing labour force;

(c) promote a more equitable distribution of benefit [sic] of development and I mprove social conditions, especially in the rural areas;

---

[1] Although relatively well endowed with land when compared to other Pacific nations, much of Solomon Islands is mountainous and very rugged. This makes the development of infrastructure and industries very difficult.

    (d) maintain greater financial stability; and

    (e) foster a greater sense of national unity and national identity
        (SINURP,1994:7).

Given the high rural population, and high overall population growth rate of 3.4 percent, the need to ensure rural development is obvious. High population growth, places pressure on public goods and services such as health, education and water supply, but also on the ability of local people to provide adequate livelihoods for themselves. Table 4.5 indicates that when compared to other Pacific Island countries, Solomon Islands is below average in most of the key indicators of human development and urban population, and above average in percentage labour force in agriculture. Comparison with low income countries as a whole also indicates that Solomon Islands is below average in adult literacy, life expectancy at birth and population per physician and above average in, population growth rate and infant mortality. The result is that on the UNDP's human development index Solomon Islands ranked 118 out of 173 countries (Economic Insights,1994:9).

The large proportion of rural dwellers in a country of scattered islands makes it difficult to implement effective strategies to tackle these problems. The five objectives of the National Development Framework indicate a desire to promote economic growth and stability, create employment, promote equitable distribution of the benefits of development and foster national unity (SINURP,1994:7). In this respect Solomon Islands national government policy follows a conventional approach to development strategy, of focusing on macro-economic factors, and implementing strategies to enhance these.

As was suggested in chapter three, however, this approach often neglects a large proportion of the population, particularly women, who play a crucial role in village level livelihoods. Box 4.1 gives an indication of the situation in which many women in Solomon Islands attempt to provide livelihoods for

themselves and their families. Although positive programmes for local level development which assist women and other marginalised groups exist in Solomon Islands, government commitment to these programmes has not been evident in resources allocated to them. Women have to a large extent been viewed as a resource which needs to be 'more fully harnessed in development efforts' (Scheyvens,1995:154).

Solomon Islands, then, exhibits a complex national context in which development is attempted. As we have seen, recent economic growth has to a large extent been solely supported by unsustainable resource extraction, particularly of forests. In a country in which 85 percent of the population depend on subsistence agriculture and the collection of forest resources, this state of affairs represents a serious threat to the livelihoods of a great many people. Additionally, Solomon Islands exhibits a great diversity of unique flora and fauna which depend on forest cover for survival, including islands with the eighth, thirteenth and thirtieth highest conservation values out of 226 Pacific Islands (Dahl, 1986; SPREP,1992:2).

Although Solomon Islands have formulated a National Environmental Management Strategy (NEMS) which lists ten environmental objectives for sustainable development (SPREP,1993:xix), little progress has been made in legislating for and implementing these (Economic Insights,1994:6). Although in part due to government level reticence in implementing restrictive environmental policies, implementation is made more difficult by the conflicting interests of local landowners, provincial and national governments and powerful foreign interests. What is certain, however, is that an increasing number of Solomon Islanders must continue to derive livelihoods in changing circumstances. It is within this national development context that the present research on local livelihoods is located.

COUNTRY	% Population with access to health services	% population with access to safe water	Public expenditure as % of GNP		Urban population as % of total	% labour force in agriculture
			health	education		
Cook Islands	100	99	6.2	7.2	59	18.8
Fiji	98	92	1.7	5.1	39	44.1
Kiribati	85	65	5.9	7.0	35	73.8
Marshall Islands	95	50	10.0	12.8	67	21.8
Niue	100	100	10.6	12.4	-	6.2
Palau	75	88	9.3	9.1	60	14.6
PNG	88	23	1.3	2.6	15	79.9
Western Samoa	100	70	3.6	5.3	21	63.5
Solomon Islands	80	61	3.7	6.0	13	82.0
Tokelau	100	100	-	-	-	-
Vanuatu	-	87	2.4	4.6	18	74.4

Table 4.5: Human Development Indicators: Selected Pacific Island Countries
Source: UNDP, 1994

About 80 percent of people live in rural villages. A recent study examined how eight rural women spend their time. Their working week is 66 hours. There is no 'day-off' apart from family births, weddings and burials. About 23 hours a week are spent going to or in the family garden which feeds 5-10 people. Their husbands help in the gardens once every two weeks. Six of the eight women are illiterate. None have agricultural training. They have never been visited by an extension officer. Degenerating soils mean production is 20 percent below family demand. There is an extra person to feed every two years. Good food plots are now an hour's walk away.

The women have one hour a day for leisure plus the weekly church service. Two of the eight husbands are working away. Cooking and cleaning take up another 20 hours a week. Childcare time is falling - on average two to three hours a week. There is no pre-school. Three children in each family get malaria every year. The clinic is twenty kilometres away. The nurse visits, at best, four to six times a year. The eldest daughter in each family is already working in the garden. Their chances of making secondary school are only one in ten. Life goes on...

Box 4.1: Profile of Rural Women in Solomon Islands
Source: Economic insights,1995 (after Warmke (1985) and Unicef (1993))

Section two presents the methodology used for this research, and specifically presents the means by which the local context of development and livelihoods in Solomon Islands was investigated.

METHODOLOGY: PARTICIPATORY RURAL APPRAISAL (PRA)

The concept of livelihoods, as we have already seen, presents a new approach to the theory and practice of the development-environment interface at the grassroots level. This new approach suggests that conventional forms of analysis are inadequate for dealing with the diversity and complexity of livelihoods, and also fail to address adequately the knowledge and perceptions of local people concerning their livelihoods and the environment in which these are attained.

In this respect, for the purposes of this research, a less structured and more participatory series of methods is used to gather information concerning local livelihoods. The emphasis here is on understanding how people gain a living, and the interaction they have with other individuals

and the community as a whole, with the wider local and national economy and with the environment in the process of gaining this living.

Perhaps more importantly, however, is the importance that this research methodology places on the participation of local people in the research process. The rationale for doing so is to understand livelihoods as they see them: what is involved in the derivation of their livelihoods, why specific aspects are important, and what are the problems and areas of concern as local people perceive them?

The methodology used for the analysis of livelihoods for this research is known as Participatory Rural Appraisal (PRA). Rather than a single methodology, PRA presents a series of methods for gaining information about local reality. Absalaom et al provide a working description of PRA as 'a growing family of approaches and methods to enable local people to share, enhance and analyse their knowledge of life and conditions, to plan and to act' (Absalaom et al,1995:5).

The Philosophy of Participatory Research

PRA forms part of a wider family of development theories, approaches and methods which centre on a concern for the maximum possible participation of local people in the entire development process. Broadly labelled 'alternative development' these strategies can be seen to form an opposing ideology to the mainstream 'growth-maximisation' and modernisation model of development, which, by its very nature, is exclusionary of large numbers of people (Friedmann,1992:8-9). As Chambers suggests, the Western bias of mainstream development theory and practice has worked to denigrate the reality of people's existence in the Third World, and the knowledge which local people have of this existence (Chambers,1983,1993,1995). This Western Bias is closely associated to what Friedmann terms 'bureacratic poverty', whereby poor people are viewed as ignorant and unable to help themselves, and

therefore require the help of outside institutions, particularly the state. They are variously labelled and measured by outsiders who then decide what should be done about them. (Friedmann,1992:55-56). In this respect people are not only disempowered to the extent that they become poor, but are also disempowered as they attempt to exist in that situation.

The rationale behind empowerment and participatory approaches to development is essentially to let people help themselves, and to provide the resources for them to be able to do this if and as they need them. In this respect participatory research is not merely a method of data gathering, but an approach to starting a chain reaction of development which begins with, and ultimately benefits, local people.

The origins of participatory research, although associated with the rise of alternative development strategies, can be linked to the educational work of Paulo Freire in the 1960s (Chambers,1994a:954). Central to Freire's work was the notion of conscientization as a process of liberation from oppression and dehumanization. The raising of critical consciousness within oppressed peoples is seen as an essential step towards freedom from oppression. This process necessarily begins with local people, and is conducted on their terms, and in ways with which they feel comfortable. In this respect it is dialectically opposed to conventional methodologies which, although well intentioned, are nonetheless imported and foreign. As Freire puts it:

> Pedadogy which begins with the egoistic interests of the oppressors (an egoism cloaked in the false generosity of paternalism) and makes of the oppressed the objects of its humanitarianism, itself maintains and embodies oppression. It is an instrument of dehumanisation (Freire,1968:30).

Participatory research is, then, an attempt to empower local people to change their situation as they deem necessary. It represents a reversal of the power structures within a research situation from one of the researcher defining what is important, to one of learning about people's lives and listening to what they have to say. As a research methodology it

also attempts to avoid the biases commonly associated with conventional survey work undertaken by outsiders, and particularly those associated with the attitudes and behaviour of researchers (Chambers,1992:14; 1994a:958-959).

PRA: THE APPROACH

Rather than a single method, PRA presents a 'menu of methods' for the collection of information concerning local people's livelihoods, resource use and knowledge systems (Chambers,1992; 1994a; 1994c). It is closely associated with, but is an extension of an earlier series of techniques known as Rapid Rural Appraisal (RRA), the difference being the emphasis on participation by both local people and researchers in the research process.

RRA and PRA therefore share a number attributes which differentiate them from more conventional approaches to research. Chambers (1992:14; 1994b:1254-164) emphasizes six basic principles of the two methods:

1) A reversal of learning. The emphasis is on learning from local people in the situation in which they live, and therefore gaining from the technical knowledge they have about their physical and social environment.

2) Flexibility of approach. Each research situation will be different, and the methods recognise this by emphasising flexibility of methods, opportunism, improvisation and iteration. The use of cross-checks between methods ensures the ability to rigorously check results.

3) Offsetting biases by taking a relaxed, unhurried approach; seeking out all people, including the elderly, women, children, and the sick; listening to people rather than lecturing to them; being unimposing,and; learning of people's priorities.

4) Optimizing trade-offs of information between quantity, relevance, accuracy, and timelines; knowing what is useful and what is not, and understanding the differences between the two, and; not measuring more than is necessary.

5) Using a range of methods to triangulate and cross-check results. This may include using more than one researcher from more than one discipline.

6) Seeking diversity. The emphasis in both RRA and PRA is 'the maximisation the diversity and richness of information.

In addition to these shared principles, PRA also stresses a facilitatory approach, whereby local people themselves undertake the research and present the outcomes. In this respect the key task of the researcher is to start the process and then stand back and not intervene. PRA also involves a continual process of critical self-evaluation by the researcher, in terms of his or her behaviour and attitudes. This means taking responsibility for the research process, and trying to continually improve both the process itself, and their own attitudes to both local people, and their knowledge.

PRA also attempts to construct a more reciprocal research relationship between those involved. This necessarily means the sharing of information and ideas between the researcher and local people; and between different organisations who may have an interest in the research (Chambers,1992:15; 1994b:1265). This 'reversal' of learning is indicative of the fundamental philosophy of PRA. It is what Chambers refers to as the reversal from the etic to the emic: from the valuing of outsiders' knowledge to the valuing of local knowledge. In this respect their can be no preconceived notion of what is important for the research, because what is important will only be discovered by doing the research (Chambers,1994b:1262).

The above principles and approaches suggest that PRA provides a comprehensive and multidisciplinary methodology for understanding local level society and environment. The PRA handbook suggests that PRA:

> helps local communities mobilise their human and natural resources to define problems, consider previous successes, evaluate local institutional capacities, prioritise opportunities, and prepare a systematic and site specific plan of action - a Village Resource Management Plan (VRMP) for the community to adopt and implement (PRA Handbook,1991:5-6).

Both PRA, and its parent methodology RRA, have been widely used in a variety of contexts to undertake both research and practice in development. These include the collection of demographic data in Zimbabwe (Marindo-Ranganai,1995:53), the promotion of self-reliant rural development in Ethiopia (Ammassari,1995:62); the participatory appraisal of activities of a development NGO (Howes and Roche,1995:69), and the use of PRA to access indigenous knowledge to enhance sustainable development (Wickham,1993). The value of the methodology, then, lies in its diversity of applications, and its cost effectiveness. This enables a wide variety of organisations and individuals, including local people in rural areas, to utilize it for both research and development practice.

PRA: THE MENU OF METHODS

As has already been suggested, PRA incorporates a wide variety of methods for both eliciting information and enabling local level development initiatives. Any PRA survey begins with research of secondary data relating to the topic and locality within which the survey is to be conducted. Following this is the survey proper using the secondary research as a base, and employing a number of methods to clarify, add to and expand on information already gathered. The exact nature of the survey will be dependent upon the context within which it is undertaken (eg. rural vs. urban or tropical vs. arid environments), who is involved (eg. women or men or both, farmers or bush people, slum or village dwellers), and what the aim of the survey is (eg. to collect information, to initiate a specific project, to instigate resource management strategies, or to empower local people in development).

Because of the nature of the methods, involving local people conducting their own research, a wide variation and variety of information can be obtained. This may include social data such as population, education, wealth and health; resource data including location, type and amount of crops, access to and use of common resources and changes in these

over time; climate data on seasonal patterns and long term change, including rainfall, growing seasons. In addition to this type of information of local reality, it is also possible to gain access to the wealth of 'psychological' and cultural data which local people hold. This may include the perceptions, desires and needs of people in relation to development and resource management, and indigenous knowledge of relevance to these.

Because of the variety of methods within PRA it is possible to design a methodology which is suited to the task at hand. What follows is a brief introduction to these methods followed by a more in-depth assessment of the methods used for this research. Table 4.6 presents an array of methods which are used in PRA surveys with local people. Chambers also suggests that the sequence in which methods are used can be an important component of the survey, with each method identifying key issues for the next (Chambers,1994:961). It is important to note that Table 4.6 does not provide an exhaustive list of methods, but is indicative of the type of activities which comprise a PRA survey.

Within the PRA methodology there is a recognition that the exact nature of the methods used, and the effectiveness of the individual methods will vary from place to place. In this respect although a preconceived idea of what methods to use is important, it is equally important to remain flexible at all stages throughout the process. The performance of a survey can be seen as a function of the flexibility, adaptation and improvisation of the methods used (Chambers,1994c:1439).

With this in mind the following methods were chosen for this research. It should be noted here that without any previous experience of these methods it was difficult to determine their potential efficacy in eliciting the information required. As such there was a certain degree of faith involved in choosing these particular research activities. The rationale for selecting them was firstly to provide a broad selection of activites which would

provide a spectrum of information on local life, and secondly, to provide a

METHOD	PROCEDURE	RATIONALE
Secondary sources	search for books, maps, articles, reports, aerial photgraphs, satellite images	provides basis from which to start
Semi-structured interviews	mental or written checklist of points, but open-ended and non-confrontational	allows the follow-up of the unexpected, cross-checking information
Key informants	seeking out 'experts' in the community to provide specific information	Provides in-depth information on particular aspects of local life
Focus groups	using groups of people to focus on a particular aspect of local life to determine a consensus of opinion	Allows for a more broad analysis of local knowledge and the reality of local life
Do-it-yourself	Ask to be taught how particular tasks are carried out within the local area	provides a deeper understanding of local activities and capabilities
Participatory mapping and modelling	local people design maps and make models of the local community and environment	Provides valuable information on local communities and resources, and allows local people to assess their own situation
Transect walks	local people walking through an area and noting, drawing and discussing local features, resources and problems	Provides additional information of local environment, community, problems and potentials
Time lines and trend and change analysis	construct chronologies of local events, resource availablity and use using local informants	allows the analysis of change over time, and indicates what local people consider to be important historical events
Seasonal calendars	construct seasonal calendars showing key seasons, months, and cyclical events	elicits information on cyclical processes within a local area, eg. crop rotations, planting harvesting, rainfall.
Daily time-use analysis	construct time-use analysis including time spent on activities, degrees of drudgery, may also indicate variation over weeks, months etc.	Provides information on the relative importance of particular activites in relation to the amount of time spent on them
Institutional diagrams	use 'chapati' or venn diagrams or other diagrams to indicate the relative importance and location of institutions such as government, local councils or village level authority.	indicates local and broader structures of authority, power and control.
Matrix scoring and ranking	Use seed or some such other material to indicate the relative importance of resources, social groupings, assets, soils, crops, and differences in wealth etc.	indicates differences between people and relative importance of local resources, facilities and problems

Table 4.6: Menu of PRA methods
Source: Chambers,1994b

range of separate methods such that if one or more did not work, then the others would provide basic information with which to analyse livelihoods.

The ten activities thus selected were:

1) Social mapping
2) Resource mapping
3) Transect walks
4) Development priority ranking
5) Time lines
6) Seasonal calendars
7) Household ranking on the social map
8) Household farm sketches
9) Photographic ranking
10) Individual Interviews

These ten methods, explained in detail below, formed the basis of the survey and were to be carried out in approximately the order given. As we shall see later, problems encountered in the field limited the effectiveness of these methods, and as result three were dropped entirely from the schedule, and one was added while in the field

Additionally, a journal was kept on a daily basis of conversations and interactions with village inhabitants. This also included a record of how each activity in the survey proceeded, people's reactions to them, and their interactions while they carried out each activity. The aim was to observe and record people's impressions of the survey, what they talked about, and their perceptions on day to day topics such as the the economy, development, and the government. Obviously language provided a barrier to a full understanding of people's interactions. Although pigin English was commonly spoken, local people's interactions with each other were carried out in the local language. It was rare that

they were willing to give an interpretation of these conversations, as conversations which they wanted to be understood would be spoken in Pigin.

SURVEY SEQUENCE

The actual sequence of the methods used in the survey was similar to that given above. The survey began with the social map of the village to give an indication of population, wealth and housing standards on which to base subsequent methods. The following describes the survey process that was carried out at two villages at the proposed World Heritage Site at East Rennell.

1) Introduction

The initial step was to gain an introduction and acceptance into the village, explain why I was there, and what the survey was for. In both villages this took two or three days as it was important to proceed at a pace determined by the villagers themselves. An initial village meeting was arranged where I introduced myself and explained the survey.

Because the survey was also undertaken for the World Heritage Project I was required to explain a little about this and why the survey was important for this. A brief introduction was given to the activities in the survey and what each one was designed to do and what it was for. At the close of the meeting the villagers asked questions about the survey, the World Heritage Project and about me. The next meeting would be arranged, usually for the following day.

It was seen as important that the survey should disrupt the daily activities of the villagers as little as possible, and as such they were given control of when and where the meetings would take place, and how long each one would last.

2) Social Map

The villagers were asked to draw a map of their village showing:

* All the buildings (dwellings, cook houses, church, school etc.)

* Who lived in them (distinction was made between boys and girls under 16, whose ages were given, men and women who in most cases were reticent about their ages, and elderly males and females)

* Whether or not a house was completed

* Household assets such as pigs, dugout canoes, fibreglass canoes, outboard motors and chainsaws

* The identification of sick or handicapped people (only long-term illnesses were included)

* Cooking facilities

* Other items which people wanted to include.

3) Resource Map

Villagers were asked to draw a map of the area which they used to gather resources such as trees, plants, food, fish, where they had gardens and what crops they grew, and where they got their water from. In both villages this entailed drawing large areas, if not all, of the eastern end of the island, although the differences between men's and women's maps were marked.

4) Transect Lines

These involved taking a group of villagers into the bush and then walking back towards the village and noting everything which they deemed worthy of mention. Because of the density of the surrounding bush, this took place along an already formed track, but a good cross-section of landuse zones was derived. The length of the transect was left to the villagers discretion, but was on average approximately 600-800 metres.

5) Development Priority Ranking

Villagers were given ten red coloured stickers and asked to indicate on their social map areas which they though needed development. They were then given ten green stickers and asked to rank these in order of priority from one to ten. The same process was carried out for the resource map. In this activity no definition of 'development' was given. Although vague suggestions were given as to the sorts of areas which may be included, the emphasis in this method, as in all of the PRA methods, was on letting the villagers decide what was important to them with as little influence from the researcher as possible.

In the first surveyed village, it was at this point that the women chose not to continue the survey. No reason was given at the time, and the survey was continued by the male group, which soon became a mixed group of both men and women.

6) Time Lines

The emphasis of this activity was on understanding the key events in the history of the local community as perceived by local people. A starting point was suggested as the conversion to Christianity of the majority of local inhabitants in 1938, and informants were asked to suggest other events in the intervening period. Again, it was largely left to informants to determine what constituted an important event. This activity was attempted in the field but abandoned due to difficulty remembering important events.

7) Seasonal Calendar

Villagers were asked to construct a calendar of the yearly cycles in their lives. Attributes included: crop planting and harvesting; water supply;

labour demand; food consumption; the presence of pests; wind; and, rainfall. The precise nature of the calendar was largely left to local people, and this is reflected in the two that were completed. The first is along the lines of a Western calendar showing months and their approximate local equivalent. The second, however, is purely based on local knowledge, with interpretation added after it was completed.

8) Household Ranking

This activity attempted to have the villagers rank the households in the village according to wealth, and then discuss the differences with them. This activity yeilded little because villagers were unwilling or unable to perceive and account for differences between households. It appeared that they thought of all households as equal in wealth.

9) Individual Farm Sketches

Two gardens from each village were sketched showing garden area and the type of crops grown. An indication was given of how many people the garden provided for and its distance from the village. As such information from this activity is available for one of the two villages surveyed.

10) Photographic Ranking

Using a polaroid camera, groups of villagers were asked to photograph ten items or objects which they thought as important to either them or their village as a whole. When this task was completed they were asked to rank them in order of importance and explain why they were important. This activity was added to the schedule while in the field at the suggestion of two PRA researchers who had completed surveys in another area of Solomon Islands.

11) Individual Interviews

As a structured, formal interview this activity was largely unsuccessful. People seemed unwilling to sit and answer a series of questions about village life. Many of the questions were, however, answered in the previous activities, in informal conversation with people, and through observation.

REFLECTIONS ON THE RESEARCH PROCESS

As Webber and Ison have pointed out (1995:107), the emphasis of much PRA is on the 'doing' dimension, with little recognition of procedural and conceptual issues, and the quality of outcomes that result from the research process. This section attempts to provide a critical self-appraisal (assisted in part the people of East Rennell) of the research process and my place in it.

Almost without exception, the literature on PRA emphasises the group nature of the exercise, both in terms of the local community, and the research 'team'. As Chambers (1994c:1438) also suggests, one of the basic components of PRA is the behaviour and attitudes of the researcher(s) themselves in undertaking a survey. Because of my position as a lone outsider in a foreign socio-cultural and physical environment and the stressful nature of this situation, it proved difficult to maintain an aura of rapport and eagerness with local people. Because rapport is absolutely necessary for an effective survey, I suggest that the results reviewed here will in some part reflect a personal component of the research context and my part in it.

A second concern regarding the PRAs undertaken on Rennell is ethical in nature. Initially, these surveys were to be undertaken as a purely academic exercise: a learning process strictly for my benefit, the object of which was to complete this thesis. On arrival in the field area, however, the PRAs also became integrated into the development project on Rennell

which formed part of the focus for this research. The nature of a PRA as an academic learning experience, and that associated with a sustainable development project will perhaps differ in their approach and desired outcome.

Local people were made aware of who I was and why I was in their community, and that the information being collected was for both the development project and my university work. Although the aim of the project PRAs was a baseline survey of local conditions, the fact that I had dual agendas may have affected the usefulness of the results for both of these, and local people's understanding of the object of the surveys may also have had some effect on the nature of the information included.

A third issue, which is also ethical, concerns the level of experience in conducting PRAs. The question is: is it ethical for an individual with no experience to enter a rural area and raise expectations (particularly when local people associate you with a development project) by talking of development and exploring problems and solutions, while having no means or ability, or indeed any intention, to ensure that the process continues. This is perhaps not in the spirit of participatory research and development.

There is also a concern with the results of PRA surveys, one which perhaps affects all research, that there will still be an element of uncertainty that the results obtained are a true reflection of reality. Even though participation is fundamental to PRAs, it is still virtually impossible to conduct them with all members of a community. People will be away, sick, or just unwilling to take part (as was the case with these surveys). In this respect PRA surveys will still reflect, but to a lesser degree perhaps, the fact that the results are still, and will always be, the reflection of a sample of people.

Finally, the results of any survey will be open to a variety of

interpretations. The way local people perceive the results will differ from the perceptions of an outside researcher, as will the ways in which the results inform actions which occur as a result of these interpretations. This reflects the differing aspirations of the two groups. Local people are concerned primarily with their day to day survival, and as such will interpret the results accordingly and act as best they can. Outsiders, on the other hand, may be concerned with ways in which development may be better implemented, will act on how they interpret the results, and these may or may not conflict with those of local people. In this respect, although PRA attempts to better integrate local knowledge into wider research and knowledge systems, and thereby better understand what to do, it does not really tackle the question of how to do it.

With these points in mind I take full responsibility for the following interpretation of data provided by the people of East Rennell. They drew the maps, described their environment and showed me their gardens, and as such the data belongs to them. What follows is my interpretation of it.

CHAPTER FIVE

SUSTAINABLE DEVELOPMENT:
THE EAST RENNELL WORLD HERITAGE PROJECT

INTRODUCTION

Assuming that the conservation of natural resources is necessary for continued human welfare, and the exploitation of those resources is also necessary for continued human welfare, how can these two seemingly conflicting goals of sustainable development converge such that local people are able not only to provide, and continue to provide, sustainable livelihoods for themselves, but also improve and enhance those livelihoods. In this respect, sustainable development necessarily entails attempts to provide for the utilisation of resources, but at the same time ensure that they are not degraded, which ultimately suggests the benign use of the resource base.

The World Heritage Project on East Rennell in the Solomon Islands provides an example of an attempt to implement a development strategy which at the same time aims to preserve the environment for future generations. The project is an integrated development/conservation project which has been established jointly by the Solomon Islands Government (SIG) and the New Zealand Overseas Development Assistance Programme of the New Zealand Government. The aim of the project is to gain World Heritage listing for East Rennell, an area of unique cultural and environmental quality, and at the same time enable local people to benefit from this listing through ecotourism ventures and small business operations.

Although first suggested in 1989, it has only been in the last two to three years that work has commenced, and moved forward, on gaining listing for East Rennell on the World Heritage List. At time of writing the project has

reached the stage of formulating the nomination document for the proposed site, which will then be forwarded to UNESCO in Paris for deliberation and possible acceptance. Consequently, the project is at an early stage, and as such conclusions as to its success are difficult to make. The emphasis here then, is on a description of the objectives of the project and how these are being, and will be met.

This chapter outlines the reasons why Rennell has been selected as a possible World Heritage site, and why and how listing will enable the development of the area. It provides an outline of the World Heritage List as a global conservation programme, and how this is implemented at the grassroots level. The focus of the chapter is on the linkage between the global and the local, and specifically how global theory is transfered to the local level through projects such as this, thereby influencing the context in which livelihoods are derived.

THE WORLD HERITAGE CONVENTION

Established in 1972 by the United Nations Education, Scientific and Cultural Organisation (UNESCO), the World Heritage Convention (formally The Covention Concerning the Protection of World Natural and Cultural Heritage) is designed to 'provide for the protection of internationally outstanding natural and cultural heritage sites which were threatened by various kinds of development' (Nelson and Alder,1992:ix). The Convention is based on the premise that some natural and cultural sites around the world are of value not only to individual nations, but to humanity itself (von Droste,1992:3). Subsequently, the concept of World Heritage is an 'international legal and policy extension of the National Parks idea' (Cook,1992:47).

The World Heritage Convention maintains a list (the World Heritage List) of such sites which individual countries have nominated as being worthy of preservation for their natural and/or cultural value. As of the first of

January 1995, a total of 440 sites around the world had been so designated, with 140 nation states being party to the convention (UNESCO,1995). As von Droste states, this makes the World Heritage Convention 'the world's most universal international legal instrument in the field of conservation' (von Droste,1992:3).

Despite this international legal status, however, it is also widely misunderstood, in many countries unknown, and does not ensure the impunity of sites from human action (Nelson and Alder,1992:x). As is the case with many international conventions, the effectiveness of World Heritage in meeting its desired goals is dependent upon the will of national governments to enforce legal protection of sites, and for local people to understand why protection is necessary to ensure continued preservation.

The central goals which the global World Heritage Convention attempts to impart at the national and local levels are:

(i)   to establish a credible and universally representative World Heritage List;

(ii)   to protect, conserve and manage effectively these irreplaceable sites; and

(iii)   to build public awareness and mobilize skills and resources for preventative and curative World Heritage work (von Droste,1992:4).

These suggest that the World Heritage Convention is essentially a preservationist instrument, rather than one designed to promote development at the local level. As such the Convention is representative of a Northern environmental viewpoint which aims at conservation.

It has been suggested that in order to attain these goals effectively a wider representation of countries on the World Heritage List is necessary, to include those which are not yet party to the convention or have no sites listed. The continued and effective conservation and management of sites also provides a difficult, yet vitally important goal. Listing by itself does not ensure protection, and must be followed by ongoing monitoring to ensure sustainability. This is of paramount importance not only to maintain the

natural and/or cultural integrity of sites, but also to ensure that local people benefit from, and support the listing of their immediate environment or monuments (von Droste,1992:4). Von Droste suggests that progress in the implementation of the World Heritage Convention will be stunted without the support and participation of local people, and as such the promotion of the aims and goals of World Heritage is of utmost importance in gaining the support of these people, and thereby ensuring the long term protection of sites (ibid.:5).

These points imply that although the World Heritage Convention is an international legal document designed to implement global conservation strategies, its effectiveness is very much dependent on local level responses to individual sites.

Criteria for World heritage Listing

As has already been suggested, inclusion of a site on the World Heritage List may be made as a reflection of either unique cultural or natural properties, or both. Currently, however, the List shows a tendency towards cultural sites, with approximately 75 per cent being registered as such (Thorsell,1992:25). Table 5.1 outlines the criteria which are used to judge a site for inclusion.

Within this framework of criteria the World Heritage Committee of UNESCO assesses each site nomination, and decides whether to formally include the proposed site on the World Heritage list. In addition to the criteria listed above the Committee also uses sites previously listed by which to judge the site under consideration.

To have a site listed, a country must firstly ratify, or become a state party to, the World Heritage Convention. This necessarily entails agreeing to conserve the sites within its territory, and provide obligatory contributions to the Convention Fund (set at one per cent of their contribution to the

UNESCO budget). To be able to do this a country must have a sponsor country who agrees to both nominate it as a state party to the Convention, and assist it in gaining listing for World Heritage sites. The process by which countries become party to the convention is therefore separate from that by which they gain listing for sites within their borders. Becoming a state party to the convention does not automatically assure that nominated sites will be listed, as this requires a vigourous nomination process. This process is outlined in a later section concerning the proposed East Rennell World Heritage site. In return, a country which is party to the convention and has, or is attempting to have, sites listed on the World Heritage List, is able to make use of funds and technical assistance from the World Heritage Fund to both gain listing and provide training and planning for the on-going management of the site.

CULTURAL PROPERTIES

A monument, group of buildings or site of outstanding universal value that meets one or more of the following criteria and test of authenticity:

*   unique artistic achievement.

*   exerted great influence.

*   unique or at least exceptional testimony to a civilisation which has disappeared.

*   type of building or architectural ensemble illustrating a significant stage in traditional human settlement.

*   directly or tangibly associated with events or with ideas.

NATURAL PROPERTIES

A property which has outstanding universal value which meets one or more of the following criteria and fulfils the conditions of integrity:

*   representing the major stages of the earth's evolutionary history.

*   representing significant ongoing geological processes, biological evolution and man's [sic] interaction with his natural environment.

*   superlative natural phenomena, formations or features.

*   most important and significant natural habitats with threatened species of animals or plants of outstanding universal value.

Table 5.1: Criteria for World Heritage Listing
Source: Droste,1992:15-16

The World Heritage Convention also recognises that threats to sites can only be reduced by implemnting sustainable development strategies designed to suit the immediate local and national context within which the site exists (von Droste,1992:3). In this respect funds, either from the World Heritage Fund or the sponsor country, are channelled into this field.

THE EAST RENNELL WORLD HERITAGE PROJECT

BACKGROUND

The Solomon Islands World Heritage Project, of which East Rennell is part, (Marovo Lagoon in Western Province has also been suggested for nomination) was initiated in 1989, and is based on work undertaken for the Marovo Lagoon Resource Management Project (Maruia Society,1991:14) and a proposal prepared by Dr. Charles d'E. Darby in 1989 (McKinnon,1990:1). The original intention of gaining World Heritage listing was to provide the basis of a sustainable rural development programme (SPREP,1992:34), by which local people could both conserve their environment and, at the same time, gain some benefit from that conservation. The official aim of the project, as pronounced in the implementation document, is:

> To preserve and protect the natural resources of Rennell ... in a sustainable manner while maintaining the cultural identity and values of the people (Wingham,1995:3).

The official objectives of the project as given by the New Zealand Overseas Development Assistance Programme Profiles alternatively suggests that the objective of the project is:

> To conserve natural resources for their sustainable utilisation; and to enhance livelihood opportunities for local people while conserving their cultural heritage (MFAT,1995:48)

Although the primary aim of the project appears to be the conservation and preservation of environmental and cultural heritage, this objective is supplemented by a number of developmental objectives through which local people may continue to carry out customary activities. The aim of

these is to enhance and diversify the opportunities available to them for the production of livelihoods. These developmental objectives are stated as:

a) To promote small business developments which are sustainable, long-term and environmentally friendly,

b) To increase employment opportunities for women and youth,

c) To promote ecotourism development,

d) To facilitate community resource planning and education,

e) To improve the status of women,

f) To achieve World Heritage listing for Lake Te Nggano on Rennell and Marovo Lagoon if possible,

g) To provide specialist assistance as required at local, regional and national levels (ibid:3).

It has been recognised that the success of the conservation dimension of the project is to a large extent dependent upon the attainment of these development objectives. As such, and as was recommended in the fact finding mission of 1990 (McKinnon,1990), the initial and central goal of the project was to implement community development programmes and resource management plans.

THE NATURAL AND CULTURAL CONTEXT FOR WORLD HERITAGE AT EAST RENNELL

The aims of the project, outlined above, suggest that the success of the project is to a large extent dependent upon East Rennell being listed as a World Heritage site. The project's focus on ecotourism as a means of providing income earning opportunities for local people, and the success of the project in attaining this, will be greatly enhanced by the international recognition which would be a consequence of World Heritage listing. In this respect the cultural and natural context of the site, which plays an important role in determining the possibility of gaining listing, is subsequently a determining factor in the overall success of the associated development projects.

At this point it should be noted that the development projects component of the World Heritage Project is not dependent upon World Heritage listing for implementation, but their success as income generating operations will be greatly improved if this occurs. The attractiveness of the area as a possible tourist destination will, again, be dependent upon the natural and cultural context, and how these are promoted to potential tourists.

The Natural Setting

Rennell Island has been described as one of the finest examples of an upraised coral atoll, and is also the largest and highest of this type of landform in the world (Maruia Society,1991:143). Typical of upraised atolls, Rennell rises sharply out of the sea to a height averaging 100 metres, and then descends in five steps (indicative of Rennell's five uplifts over a period of approximately 1.5 million years) back to almost sea level in the centre. Plate One (page 150) shows an aerial photograph taken at the western end of Rennell indicating the raised outer reefs of the original lagoon. The Eastern half of the island, and the location of the proposed World Heritage Site is largely dominated by the brackish Lake Te Nggano which, at 155 km^2, is the largest in the South Pacific (discounting Lake Taupo in New Zealand).

Because of its isolation (180km from Guadalcanal, the nearest major landmass) Rennell, and the lake in particular, is home to a number of unique species of flora and fauna. Of the two species of sea-snake which inhabit the lake, one is endemic to Rennell. No fewer than five species and fifteen subspecies of birds, three subspecies of bats, and two species of fish are endemic to the island (Maruia Society,1991:147). A total of 77 species of animal life are found on Rennell, many of which inhabit the lake area only.

Rennell is also home to a wide variety of flora. The island is devoid of many of the common canopy tree species found elsewhere in Solomon

Islands, a function of its relative youth and isolation (ibid:145). As yet only one endemic species of flora, the Rennell Orchid, has been identified, but this may be due more to a lack of scientific investigation than of unique species themselves. One survey, conducted in 1976, identified 106 wild plants all of which played an important role in local ecosystems as either a food source for other species including humans, as fast regrowth on cleared areas, or as a resource for human activity (Diamond,1976:3).

In 1976 aerial surveys of the forest of Rennell suggested that approimately 90 per cent remained unharmed, either by outside commercial interests or by the subsistence activities of the local inhabitants themselves (ibid). This figure shows little change in the most recent survey of Rennell forest, the 1993 Solomon Island Forest Resource Inventory Project (SOLFRIP,1993). This survey suggested that a similar proportion of Rennell remained in a pristine state.

The Cultural Setting

The population on Rennell are of Polynesian descent and are believed to have migrated from the east from what is now Wallis and Futuna, approximately 800-1000 years ago. To a certain extent the people of Rennell still embrace their traditional customs, and particulary those relating to land. These have been built up over a thousand years of isolation from outside influence. There is no evidence that the people of Rennell travelled to other parts of the Solomons until the arrival of European colonists and missionaries. The language of Rennell is closely related to other Polynesian languages, to the extent that, for example, the Rennellese are able to understand elements of the language of the Maori people of Aotearoa/New Zealand.

The implantation of Christianity, coupled with increasing Westernisation of clothing, housing and transportation, and an increasing monetisation of the local economy has, however, meant that many customs have been

superseded by those imported from outside. This process has, in part, been promoted by the out migration, primarily to Honiara, of people looking for work and a more Western lifestyle.

In this respect it is doubtful whether there is much merit in basing World Heritage listing on strictly cultural criteria. There is no doubt that the culture of Rennell is distinct, even other Polynesian cultures, but infiltration of outside influences and attitudes has resulted in a weakening of tradition.

Given the general aim of the project, and the more specific objectives within it, the actual listing of East Rennell on the World Heritage List presents but one part of a wider rural development strategy for the area. The emphasis is on increasing income earning opportunities for local people through the promotion of small business enterprises in the area, and particularly through the enhancement and expansion of existing skills and resources. These include ecotourism, handicrafts and beekeeping

Ecotourism

The unique cultural and natural values of East Rennell (see below and Appendix one) which make it eligible for World Heritage listing, also give it potential as a ecotourism destination. East Rennell at present attracts a very small number of tourists. A perusal of guesthouse visitor's books at the Lake suggests that between two and six tourists (not including government extension officers) visit the area yearly. These come from as far afield as Germany and Australia, and are primarily attracted by the unique flaura and fauna of the area (typically the birdlife which inhabits the lake area).

It is expected that with World Heritage listing it will be possible to promote the area more vigorously to international tourists, and thereby increase the potential for locally based employment. The focus of the ecotourism

development is to ensure that local infrastructure is in place to be able to accommodate tourists. This includes the construction by local people of guesthouses, the possible construction of a visitor's centre at the lake, and the promotion of businesses to service the tourist influx. It has been suggested that these may include tours, local stores and the supply of foodstuffs for tourists. Within the project as a whole there is also an aim to assist local people to set up industries which will operate independently of the World Heritage site. At this stage it has been suggested that these may include the export of local handicrafts (primarily fine woven mats and carvings) to both Honiara and overseas, and the promotion of beekeeping as a rurally based cash earning industry.

The project aims to provide expert assistance with product diversification for local weavers, provide local workshops as required, and assist with the marketing of products both nationally and internationally.

Project Management

The World Heritage project at Rennell is overseen by the World Heritage Advisory Committee (WHAC) who make decisions on the direction of the programme independently of project managers. This committee is comprised of the following:

*   Permanent Secretary, Ministry of Culture, Tourism and Aviation (SIG),

*   Deputy High Commissioner, New Zealand High Commission,

*   A national planning and development Officer

*   A representative from the Provincial Development Unit,

*   A National Heritage representative,

*   Four resource owner representatives from Marovo Lagoon, and

*   Two resource owner representatives from East Rennell.

Consequently, although the project is funded by NZODA, and managed by two representatives of the Solomon Islands Government (who although present at WHAC meetings, do not have voting rights), the management and direction of the project is primarily in the hands of Solomon Islanders. Local people from each site are included such that they maintain some influence in the direction of the project, and make known the interests of resource owners and local people in general.

Local Participation

The emphasis of both the development and conservation of the East Rennell project is on maximising the participation of local people, to ensure that both are sustainable. East Rennell is one of the first World Heritage sites in which land title remains with the customary owners, and they continue to live within the site boundaries. Because of this, local participation is essential in both the decision making process of the implementation phase, and the operational phase of the project.

As has been stated above, two East Rennell people are involved in the World Heritage Advisory Committee which oversees the project and has the final say in the overall operation of the project at the national level (this body includes Marovo Lagoon and national government representatives). This ensures that local people at least have a say in decisions being made at a national level, but which ultimately impact upon them at the grassroots level.

Within the World Heritage site, local people's involvement at this stage (1995-96) is limited to those who are beginning to build guesthouses (two already exist at the lake, with two more under construction). In terms of the small business project, little progress has been made, although investigation of marketing opportunities for local handicrafts is underway. In terms of the management of the site, the fact that local people must derive a living within it means that, ultimately, they must retain control of

their resources. To this end village resource management plans (VRMPs) are to be designed with and by local people, and within guidelines set by their traditional practices. In this way local people can retain control and use of their environment, and at the same time ensure conservation.

The East Rennell World Heritage/Ecotourism Project: A Critical Assessment

Although closely linked, the ecotourism/small business dimension of the project is not wholly dependent on the area gaining World Heritage listing. The rationale for nominating the area for listing is twofold: Firstly, Rennell Island presents a unique environment and culture in the world, and one which is worthy of preservation, by Western values at least. The fragility of the raised coral environment, the concomitant low level of soil build-up on a relatively young coraline substratum, and the typically fragile nature of the wetland lake area suggest that not only is Rennell a prime candidate for 'World Park' status, but that this is also in the interests of local people. Secondly, World Heritage listing presents an opportunity to advertise the area to the world at large as a tourist destination, and thereby attract people to support local businesses. The success of these businesses for local people - that is achieving their stated goal of providing income opportunities - will be a determining factor in their acceptance of the entire project, and particularly the conservation dimension. In other words, local people do not necessarily perceive the conservation objective as a desirable goal, rather, they view the development objectives which conservation makes possible as the desirable goal(s).

With this in mind the success and sustainability of the conservation dimension of the project is closely linked to the success of the development dimension. Although local people are aware of the fragility of their local environment, they are also aware of the commercial value of the resources they control. A common attitude encountered by this researcher was that if World Heritage does not provide some financial

incentive, then there is the alternative option of logging, mining or other commercial exploitation of resources to earn income.

Within local communities there is also a common perception that World Heritage listing and ecotourism will result in a financial bonanza. This is in part due to promises made by outsiders (government officials and foreign consultants in particular) who have come to talk to locals about the project. Promises of large cash grants have been made to assist with development and compensate for conservation when this is not the case. The benefits of ecotourism have also been exaggerated to gain the support of local people. The following section outlines the possible outcomes for each of the project's component parts. As is suggested, although the project presents a number of potential benefits for the East Rennell, each potential may also prove to be a disbenefit.

EAST RENNELL WORLD HERITAGE PROJECT: PITFALLS AND POTENTIALITIES.

Conservation

The conservation benefits and disbenefits of this project have, to a certain extent, already been covered. It is useful, however, to explore these more closely. If successful, the conservation of East Rennell as a World Heritage site presents the possibility of marketing the area internationally as a ecotourism destination. In this respect successful nomination of the area greatly enhances the potential for providing an alternative to resource extraction as a means by which local people may generate cash income. The opportunities to this end are, at present, not great, and the extent to which they may do this within the local domestic economy is virtually nil. In terms of livelihood strategies then, it is possible that if the project meets its goals there is potential to not only increase inflows of cash into the local economy, but to conserve the resources upon which traditional subsistence activities depend.

From a global perspective, of course, there are tangible benefits to be gained through conservation. These include the maintenance of biodiversity, the preservation of endangered species, and the achievement of global goals of sustainable development. These global benefits naturally apply to local people at East Rennell, but there is, however, a possibility that global and national good may result in local wrongs.

One possibility of conservation at East Rennell is that it effectively commoditizes the environment by making it saleable to ecotourists. The act of conservation itself may not produce commercial value, but the act of selling the rights to view it does. The act of conserving the environment at East Rennell therefore has the potential to construct inequalities and conflicts between those individuals, families or clans who are able to benefit from tourism and small businesses, and those who are not able to do so. There is evidence that this process is already occurring within communities at the lake, with jealousies arising between guesthouse owners and other sectors of the community and competition between guesthouse owners for the few tourists who come to the lake.

The commercial value of conservation also changes the nature of the value placed on land, and the nature of land tenure itself. The nature of land ownership at East Rennell is well defined by customary law and is related by elders through stories of ancestors, tambu (sacred) sites and landmarks. This system is, however, coming under pressure as land becomes a possible source of income. Customarily, each individual had use rights to land in their clan's territory. There is a possibility that this may change as the use of land becomes more structured through developments such as permanent buildings, nature trails, viewing sites and commercial gardens. There is evidence that this is already occurring at the lake.

Ecotourism

As was suggested in chapter two, ecotourism has been promoted as an environmentally benign form of development. The basis of arguments espousing this view focusses on the idea that ecotourism allows for the conservation of the environment while at the same time allowing for its exploitation as a saleable commodity. Essentially, the 'product' that ecotourism sells is the conservation value of the environment itself.

Given the doubts concerning ecotourism outlined in chapter two, what are the potentials and pitfalls of this kind of development in the context of the World Heritage site at East Rennell? There is no doubt that the ecotourism project has the potential to provide income earning opportunities for local people, and particularly from the provision of accommodation and meals. A small number of people already come to the lake for the purpose of birdwatching or to experience the unique environment and culture. The advent of World Heritage listing has the potential to boost this number if the site is marketed effectively at the international level. There is also potential to increase the length of stay of visitors by increasing the number of activities available to them.

If taken in the context of national tourism in the Solomon Islands, however, it is also posible that the number of tourists coming to Rennell may not increase markedly due to a lack of inbound tourists at a national level. As Figure 5.1 suggests, the Solomon Islands are not regarded internationally as a tourism destination relative to other Pacific Island countries. Although a World Heritage Site at East Rennell may attract international visitors directly, the viability of the ecotourism at the site as both an income earning activity and a viable alternative to more environmentally destructive activities needs to be located in a context of increasing national tourism, where visiting Rennell is but one activity which may be undertaken by visitors. Figure 5.2 indicates that inbound tourism in Solomon Islands does not show any dramatic increase. The conclusion that can be made is that the immediate success of the project, and again

its long term sustainability, is to a certain extent dependent upon the direction which the national tourism policy takes.

Overall there is a general misunderstanding amongst the inhabitants of East Rennell as to what the project entails, what is expected of them, and what the benefits will be. A number of respondents in both the PRA surveys and in general conversation voiced a concern that no one had bothered to explain to them what World Heritage actually was. In many cases there was a belief that they would lose control of their land, when this is definitely not the case. In the process of the initial fact finding mission in 1990, it was recognised that there was already in evidence a misunderstanding of the project by local people. It was suggested that consultation and education with local people should form the basis of the project, and should commence at an early stage in implementation process. At present there has been little progress on either of these objectives.

Figure 5.1: Distribution of visitor arrivals: South Pacific,1983
Source:Kissling et al.,1990

Figure 5.2: Visitor arrivals: Solomon Islands 1983-1994
Source:SIG Statistical Bulletin No. 2/95
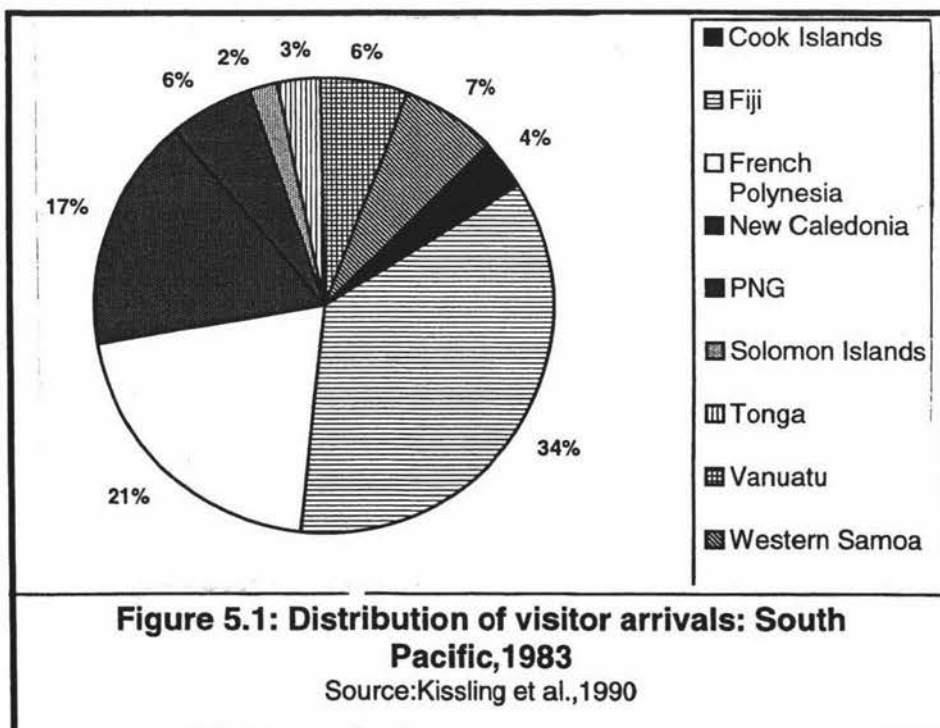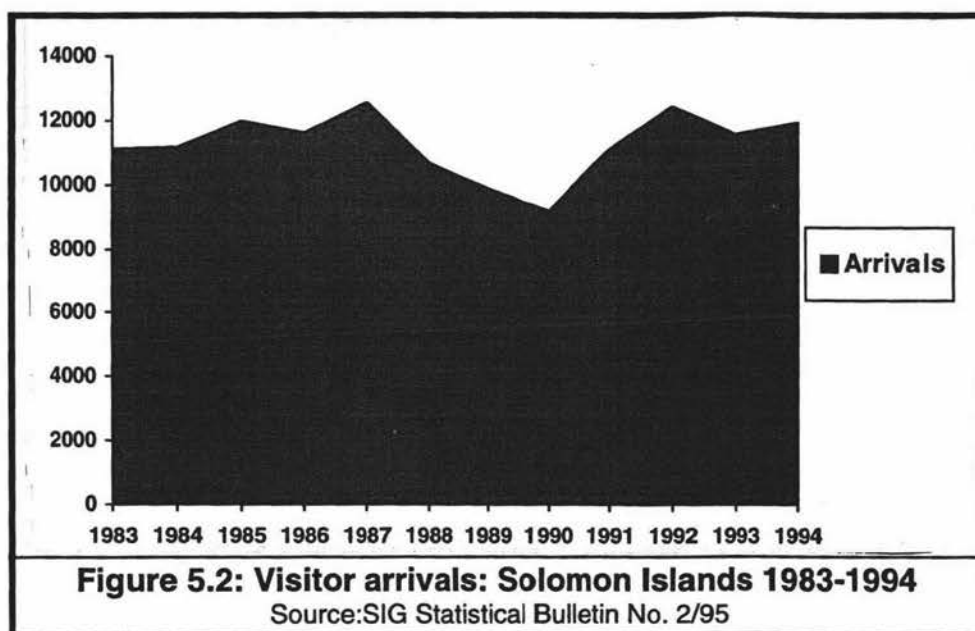
These misunderstandings, mistaken beliefs and general incomprehension of the project by local people are suggestive of either a breakdown in communication between different strata of project management or, alternatively, a flow of misinformation from the top down. The proposition here is that both these have to a certain extent influenced the current dissatisfaction of local people. It is apparent that those people who know most about the project are those closely associated with the decision making process, and particularly those who are members of the WHAC. In this respect there is a lack of information flow between WRAC representatives and the general population at the site, the suggestion being that even the involvement of local people in the decision making process does not ensure an effective dissemination of information to all those concerned with the project.

Small Businesses

Because at the time of writing little action has been initiated concerning the small business component of the development project it is virtually impossible to determine the effectiveness of this component. In addition to the two guesthouses which currently exist at the lake, two more are under construction, and at least one has been planned. Because it is difficult to judge the possible behaviour of tourists, or their length of stay, it is

uncertain whether this number of guesthouses will be utilized by tourists to the extent that they provide the owners with a viable alternative income.

SUMMARY

As an example of a conservation/development project, the World Heritage Site at East Rennell represents the projection of global development and environmental thinking to the local level. World Heritage listing can be seen as a manifestation of global level conservation goals, which focus on the maintenance of existing ecological systems. It is apparent, however, that the primary objective of the project is to conserve the environment and resources, with developmental objectives being secondary to this goal. As the initial fact finding mission of the project suggested the long term sustainability of the conservation dimension is dependent upon gaining the support and enthusiasm of local people. This requirement is in turn dependent upon the success of the developmental objectives of the project.

This presents a fundamental dilemma within the project. The success of the development component rests to a large degree on gaining World Heritage listing for the site and ongoing resource conservation and management. This necessarily entails the effective participation and support of local people who seem reluctant to commit themselves to what they see as an imposed restriction on resource use, without some evidence of benefits from the development component. This fundamental dilemma represents a manifestation of the differing viewpoints of local people and outsiders.

CHAPTER SIX

LOCAL LIVELIHOODS AT EAST RENNELL

INTRODUCTION

The concept of a livelihood, as outlined in chapter three, represents the basic mechanism, or strategy, of survival of any individual or social grouping. This chapter investigates the livelihood strategies employed by individuals, households and communities within the proposed World Heritage site at East Rennell, and provides a deeper analysis of the local level socio-economic context within which this project is being implemented.

Local people at East Rennell, regardless of the plans outside people have for their environment and development, must continue to carry out activities which provide them not only with a basic living, but also with a basic level of security in gaining that living. They do this within the social, political and environmental context within which they live, which in the case of most individuals and groups means using the skills they themselves have, and the resources they find in their immediate environment.

The livelihoods approach suggests that the process of development should, at the very least, support local livelihood initiatives and preferably work to enhance them, make them more secure and ensure their sustainability. Only by doing this will it be possible to ensure the integration of developmental and environmental objectives within the framework of sustainable development. The rationale for investigating livelihoods within the context of this thesis is to indicate if and how a sustainable development project, as a manifestation of global theory/policy supports local livelihoods, and if not, why not.

The results presented here are those obtained from the PRA surveys carried out in two villages at East Rennell, the products of which can be seen in Appendices One and Two. Although the results are presented for each village by way of separate case studies, it is important to note that there are linkages between the two villages, by way of kinship ties, which result in the continual movement of individuals, groups and goods and services between households in each village. Custom dictates that visitors to a household must be fed as a matter of course, and household resources and belongings shared amoungst kin group members. In this respect delimiting exact individual household strategies is difficult for the simple reason that a household is not a static entity on a *day-to-day* basis. It could be said that the movement of people between households is in fact a distributional and survival strategy in itself.

It should also be noted that although the results vary between women's and men's groups, and as such do not represent a precise indication of reality, they do give an approximate evaluation of the livelihood situation in each village. The reasons for the variation between the two sets of data was not fully explored during the course of the research. The nature of the methodology employed, however, suggests that there is considerable room for interpretation by participants as to what information is being sought.

The East Rennell Context

The two villages surveyed are situated at the western end of Lake Tengano as indicated in Maps Two and Three. This map suggests that the lake is surrounded by settlements, but in fact there are only four villages (Tevaitahe, Niupani, Tenggano and Hutuna) and two smaller settlements occupied by individual families who run guesthouses (Te Maingge and Sanggavalu). The other settlements indicated on this map represent the

location of villages occupied prior to 1938, usually by individual families (Hanohano) or sub-clans (Kakai'anga)[1].

After this date people moved from around the lake to the four villages as a result of the almost universal acceptance of Christianity, and, to a lesser extent, as a result of the emergence of centralised government in Solomon Islands.

A Note On Genealogy

The genealogies and oral histories of the people at the lake have been well documented by Torben Monberg of the University of Hawaii and Samuel Elbert of the University of Copenhagen (Elbert and Monberg,1965). Although it is not the intention here to provide a definitive account of these, the social structure of the lake area does have some bearing on livelihoods, and so a brief introduction is warranted.

According to Elbert and Monberg (1965) the people of Rennell distinguish between the following kin groups:

Sa'a - a large patrilineal and patrilocal descent group claiming descent from the same first immigrant (up to 24 generations before present).

Kakai 'anga - patrilineal and patrilocal descent group from a common ancestor later than that of a Sa'a

Hanohano - a lineage or family with a common ancestor who had broken away from his paternal settlement to establish a new settlement under another name, usually on land inherited from his

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[1]Genealogical information and translation from Elbert and Monberg (1965) and Elbert (1975)

Map Two: Rennell Island and proposed World Heritage Site
Source: Elbert and Monberg,1963
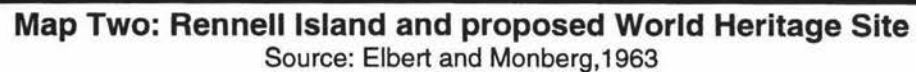
father. Also called a **Manaha.**

Hohonga 'anga - true matrilineal kin.

Tau pegea - persons of the same manaha (lineage group) as a member of an individual's matrilineal kin (hohonga 'anga).

After the introduction of Christianity in 1938 various Kakai 'anga and Hanhano came together from various settlements around the lake to form the four villages which presently exist at the lake. There seems to be little apparent rationale as to how these groupings were formed, except perhaps along church denominational lines There are presently two denominations at the lake, the South Seas Evangelical Church (SSEC), and the Seventh Day Adventists (SDA). The result of this process is such that today people who reside in a village may have access to land in a Kanomanaha (district) located in another part of the lake area. There are 14 of these districts located around the lake as shown in Map Three.

CASE STUDY ONE: TEVAITAHE VILLAGE

Approaching Livelihoods

Tevaitahe village (pronounced Te-bai-ta-he) is located at the end of the road which extends almost the entire length of the island from the airstrip at Tingoa to the western end of the lake at East Rennell. The village is also situated at the far western end of the lake which extends a further 20 kilometres to the East. Although the lake area is now connected to the West by road, this had only been the case for approximately three months prior to this research. Before the road was completed, all travel and transport of goods was by way of canoe from Lavanggu Bay in the south-centre of the island to Tuhungganggo (see Map Two), over the raised coral lip of the island (an almost vertical climb to a height of about 150

metres) and then a walk of approximately one hour over a series of raised reefs to the lake (Plate One). By this route the people at the lake have brought in goods ranging from the continuing supply of foodstuffs, to five metre fibreglass canoes, outboard motors, cement for water tanks, chainsaws and roofing iron. Transport now consists of a three to four hour tractor ride from the airstrip through dense tropical rainforest to Tevaitahe at the end of the road (Plates Two and Three).

The first impression of the village is of a small hamlet nestled on a flat area by the lake, and is reminiscent of the tropical paradise of tourist brochures (Plate Four). The village consists of 32 dwellings and has a population of 97 individuals according to the men's map, and 89 individuals by the women's map. Of these figures 56 are male and 41 female for the men's map, and 47 are male and 42 are female from the women's map[2]. Of this total population, 28 (29%) are males under the age of 16 years, and 18 (18.5%) are females under 16 years (mens map) or 20 (22.5%) and 17 (19%) respectively for the women's map (see appendix 1a and b). A summary of the survey results from the social mapping exercise are shown in Tables 6.1 and 6.2.

The unofficial results of the 1986 census (Solomon Islands 1986 Census: Report 1.C: Provisional results) indicate that the population of the village was 57 people (27 males and 30 females), which suggests an increase in

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[2] The nature of the methodology used for this research is such that varying results between groups is common. As was indicated in chapter four, the villagers were split into women's and men's groups for the exercises and as such two sets of results were obtained, often with differing results. The reasons as to why this may be the case iwas unclear and it was not until returning from the field that the differences became evident. Possible reasons may include the inclusion by the men of people who were away from the village, either for long or shrt periods, including childeren at schools in other parts of Solomon Islands, or individuals or families who were working outside the area.
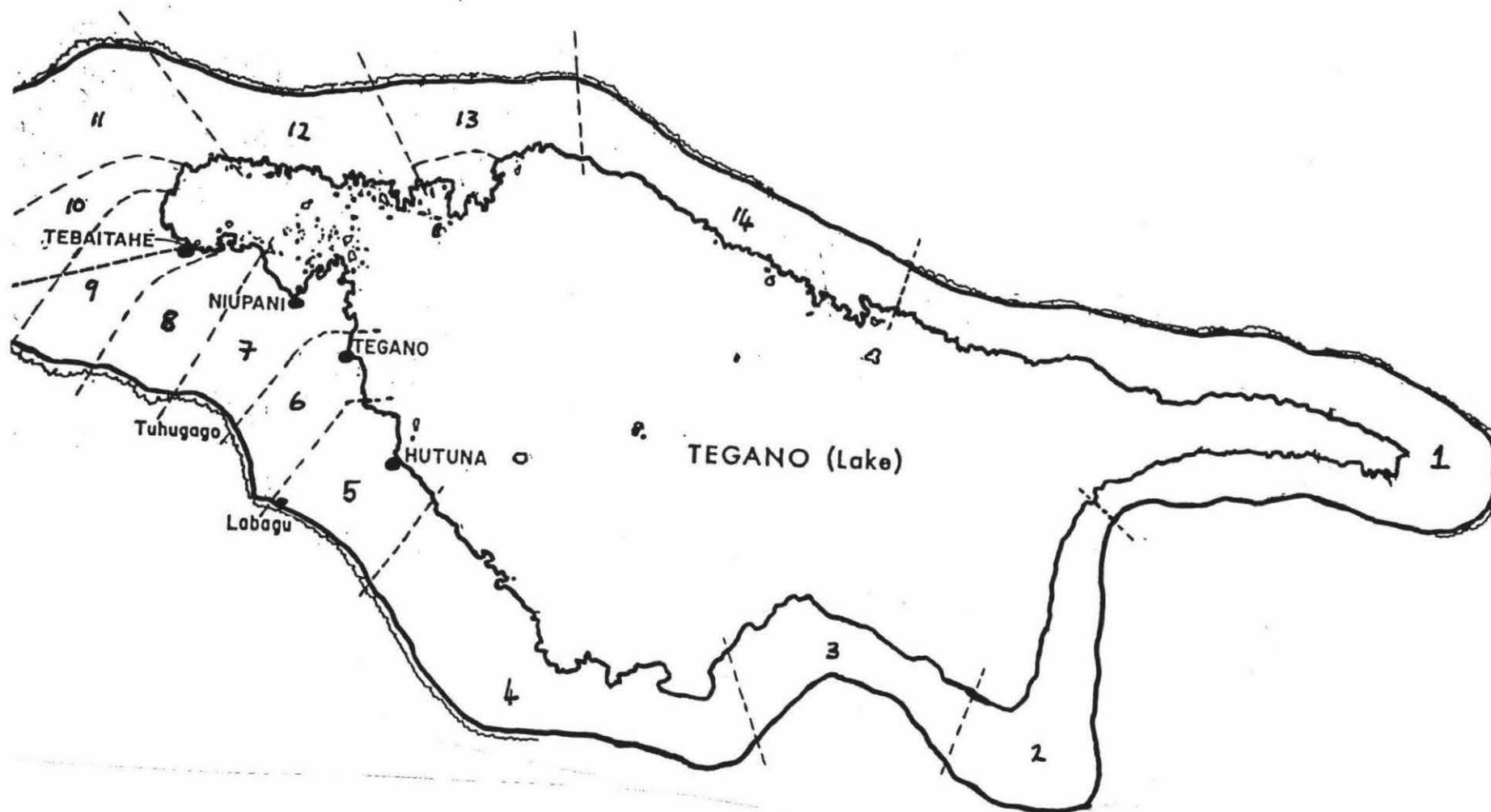
Map Three: Lake Tengano and Customary land ownership districts
Source: Chief Paul Tainiu, Tahamatangi, East Rennell

village population of between 32 and 40 people (between 56 and 70 percent) over a ten year period (4.6 percent to 5.5 percent per annum). These figures do not, however, distinguish between birth rates in the village (i.e. Natural increase in population) and people returning to thevillage after time spent in other parts of Solomon Islands. The nature of the different data collection methods used between the census and the present survey also suggests that these growth figures should be treated as indicative rather than definitive. The Central Province Development Plan for 1988-1992 (Provincial Planning Office, 1988:44) indicated that the average annual population growth rate for East Rennell was only 1.6 percent (although not stated in this document it is assumed that these figures are based on the 1976 and 1986 censuses), which may suggest, variously, that a number of people may have returned to the village in the 1986-96 period, the birth rate has exploded, or the figures from the survey for this research are incorrect.

Plate One:
Rennell Island showing the series of raised reefs
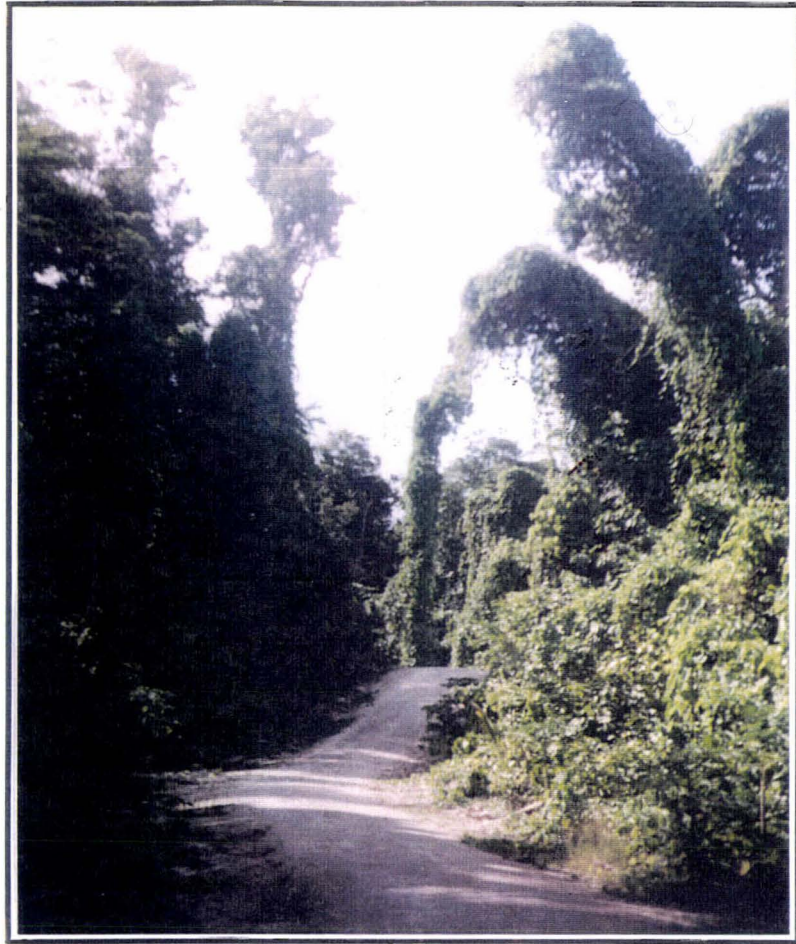
Plate Two:
The road to East Rennell and the Lake

Plate Three:
The only transport to and from the lake at East Rennell

Plate Four
Approaching Tevaitahe Village

Plate Five:
Tevaitahe Church: Central to the village

Plate Six:
The current state of housing after the 1993 cyclone

In addition to the 32 dwellings mentioned above, there are a number (11) of smaller buildings used as kitchens, all of which have open fires as the primary method of cooking (one household in the village has a gas cooker but no gas). By far the largest building is the church, which occupies a central place in the village (Plate Five). A short walk from the village are located the two school buildings which have recently been completed as part of a European Community funded aid project.

The dwellings themselves are in large part in a state of semi-completion or disrepair as a result of the cyclone which swept over the island in January 1993 leaving almost no buildings standing. The desire by most villagers to reconstruct their houses using permanent materials such as milled timber and roofing iron has meant that the majority are still to be completed. In many cases tarpaulins donated by the government after the cyclone are still used as cladding (Plates Six and Seven).

Most villagers survive, to a greater or lesser degree, by way of subsistence gardening activities, and fishing in the lake. Paid employment in the village is almost non-existent, the only exceptions being the local school teacher and the nurse, both of whom are also village residents.

The potential for earning money through cash-crop farming is minimal given the distance to the nearest market in Honiara, 250km to the north, and the lack of arable land upon which to plant crops. There is, however, a copra production project on the sea coast near the lake, although this was not in operation at the time of this research due to damage caused by the cyclone three years previously. This was the first season where coconuts were produced in any great number by surviving and newly planted palms, and the majority of these were used for local consumption. Very occasionally an individual or group would produce sufficient taro to send to the market in Honiara. The expense involved, however, often made this unprofitable. Finally, local craftspeople, particularly women, often send locally produced crafts, including finely woven baskets and mats, to be sold at a tourist shop at an hotel or the museum in the capital. Although it was difficult to determine the extent of this practice, it seemed that this generated a fair amount of income for the local economy.

Population:		
	Males (total)	56 (58% of total population)
	Females(total)	41 (42%)
	Boys(>16yrs)	28 (29%)
	Girls(>16yrs)	18 (18.5%)
	Elderly	8 (8.2%)
	Total population	97
No. of dwellings		32
No. of dwellings incomplete		32
No. of kitchens		11
Development priorities:		
1 - Roofing iron		
2 - Timber for houses		
3 - Water tanks		
4 - Health clinic		
5 - 2-way Radio		
6 - Proper slab toilet		
7 - Guest house		
8 - Gas stoves		
9 - Generator for lighting and fridge		
10 - Cyclone shelter		

Table 6.1: Men's Basic Village Data: Tevaitahe Village
Source: Men's Social Map

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Plate Seven:
The state of housing: Rebuilding in permanent materials

Plate Eight:
Tilapia and eelfish: Primary sources of protein for
villagers

Population:		
Males (total)	47 (53% of total population)	
Females (total)	42 (47%)	
Boys (>16yrs)	20 (22.5%)	
Girls (>16yrs)	17 (19%)	
Elderly	28 (31%)	
Total population	89	
People with longterm sickness	5	
handicapped people	1	
No. of dwellings	24	
No. of Kitchens	12	
with gas	1	
with kero	0	
with fire	12	
No. of households with pigs	5 (total pigs = 9)	
No. of households with chicken	13 (total = 116)	
No. of chainsaws	1	
No. of outboard motors	1	
No. of fibreglass canoes	1	
No. of dugout/outrigger canoes	13	

Table 6.2: Women's Basic Village Data: Tevaitahe Village
Source: Women's Social Map

VILLAGE LIVELIHOODS

Claims and Access

The claims which people in the village had in terms of constructing a livelihood were not clear in the survey results. As has already been mentioned, however, kinship responsibilities form an important part of social structure in the village. These may be within a household, such as the sharing of household items and foodstuffs, between households in the same village, or, alternatively, with housholds in other villages.

Differentiation needs to be made here between claims and access used on a regular basis and those used only irregularly in times of need. This is partly due to the nature of kinship ties which, although permanent, are not always used in contriving a livelihood. Some claims are continual, and are used on a regular basis, and may therefore be referred to as access rather than a claim which tends only to be used in times of stress and

shock. In this respect households in the village often pool resources, particularly expensive and difficult to obtain items such as chainsaws and canoes. This is particularly the case between households with kinship ties, although others within the village are not excluded from this type of exchange.

All villagers have access, as of right, to land with which to grow subsistence crops. As the village resource maps indicate (Appendices 1a and ab) this is almost totally within the immediate vicinity of the village, although a small parcel of resource land is located on the opposite shore of the lake from the village, and this contains a small area of gardens, taro swamp and coconut. As has already been suggested, all land around the lake area falls within one of fourteen chiefly districts presided over by the chief of that district. The land itself, however, is not 'owned' by that chief but by the entire Kakai 'anga. (clan).

The general rule is that people may use land anywhere as long as they have permission from the landowners: permission which is seldom refused. In this respect, the people of Tevaitahe maintain gardens in the immediate vicinity of their village, but on land to which they do not necessarily have ownership rights. Security of tenure is provided by custom law which dictates that land users have inalienable rights to land which they have cleared or otherwise developed (particularly the case with the planting of coconuts).

Individuals and housholds also have access to common property resources which are owned by the people as a whole. These include uncleared forest areas and the lake itself from which a variety of livelihood resources are collected (see Appendices 1c,1d,1e,1f). Both these areas (forest and lake) perform a vital livelihood function both on a day-to-day basis, and in times of stress and shock. Both provide daily food necessities such as wild foods (slippery cabbage, wild swamp taro, wild pears and other fruits, and fish and eels (Plate Eight), and non-edible

resources such as canoe trees, vines, pandanus for housing (Plate Nine), and plants for dyes (see Appendices 1e and 1f). All of these resources are also used in times of emergency, particularly after cyclones, when food may be short and emergency shelter is required. Within the forest there are a number of limestone caves which act as both cyclone shelters and emergency housing.

In addition to local kin related claims and access, villagers also have access to a limited number of what may be termed national and global claims and access. During the fieldwork for this research an agricultural extension officer from the national government visited the lake to talk to local people about new crops and pest control. Local people also have access to information and funding from the Provincial Development Unit of the National Government, who operate through the Rennell and Bellona Provincial Government (as well as other provincial governments in Solomon Islands) to assist with provincial level development initiatives. The Solomon Islands Development Trust (SIDT), an NGO operating out of Honiara, has also arranged commercial fishing workshops on the island which villagers have attended.

Additionally, because of the high level of international aid which flows into Solomon Islands, local people also benefit from aid projects. The most obvious examples of these are the new road from West Rennell and the construction of two new cyclone-proof school buildings in the village. Education is provided to all children up to form one level by the national Ministry of Education, and secondary education is provided to a limited number of children, although this entails travel to other parts of Solomon Islands to boarding schools.

The opportunity also exists for villagers to travel to other parts of Solomon Islands in order to undertake paid employment. The primary destination for this is the capital, Honiara, although work is sometimes available in Tulaghi, in the Russell Islands, or on fishing vessels working in Solomon

Island waters. It is often the case for young people, after leaving school, to take on such work and then return to the village after a number of years.

Stores and Resources

Villagers appeared to have little in the way of stored wealth, and the majority of income from paid employment or craft activities is used for direct consumption. A number of households in the village, however, do have pigs and chickens. Of the thirty two households, five owned a total of nine pigs and thirteen owned a total of 116 chickens, both of which constitute a valuable asset and food resource. Additionally, one household owned a fibreglass canoe and outboard motor, there was one chainsaw in the village and at least one household had a hand powered sewing machine. The majority of villagers used traditional dugout canoes for transport around the lake, of which there were 13 in the village (see Plate Ten).

On a day-to-day basis, however, all villagers used a wide variety of resources with which to contrive a livelihood. The foremost amongst these was land with which to grow subsistence foods, and fish (tilapia) from the lake which constituted the primary form of protein eaten by villagers. Staple crops grown by villagers included taro, coconut, sweet potato and pana, a variety of yam. Additionally, villagers collected paw paw (myupi) which grew in profusion around the village.

The forest around the village is also an important resource for food, but more importantly for construction and other materials. As the village transects show (Appendices 1e and 1f), the forest is a valuable source of medicines, including antiseptics, painkillers, diabetes medicine and medicine for diarrhoea, canoe and house construction materials including rope, leaves for cladding and roofing, timber for framing and outriggers, particular trees used for starting fires, for hair and body oil, and custom

Plate Nine:
Pandanus: key resource for local people

Plate Ten:
Dugout Canoes: The Primary form of Transport on the lake

dyes. Specific trees are also used as custom boundary markers indicating divisions of ownership and use.

Drinking, washing and laundry water comes from three sources within the village. Fresh drinking water is provided by rainfed tanks of which there are seven in the village, including two communal tanks and five attached to individual houses but to which all villagers have access. In the dry season, which runs from July to November, it is common for these to run dry. In this case villagers rely on fresh water springs which flow out of the coral rock both in the village, and further round towards the head of the lake. Much of the drinking 'water' consumed by villagers is in the form of the liquid from green coconuts. For washing and laundry villagers use the springs mentioned above, and the lake itself, although the consensus among the women of the village is that this water tends to stain clothes.

The ownership and use of imported technology for gardening and fishing is minimal, although every household has at least one bushknife, and fish are generally caught using homemade spearguns (Plate Eleven). Imported gardening implements (such as spades and garden forks) are not used in the village, although this is perhaps more a function of their cost rather than their availability or usefulness. The use of nylon nets for fishing in the lake is not common, but not unheard of either. The 1984-85 Village Resources Survey undertaken by the Solomon Island Government Statistics Office (SIG Statistics Office, 1985) indicated that no fewer than ten fishing nets were present in the village, but the survey for this research indicated only two at this time. As we shall see in a later section, part of the reason why nets are not commonly used in the lake is because both fish numbers and average size are declining. Nylon nets are also, however, expensive and therefore beyond the reach of many households.

Plate Eleven:
Many essential livelihood tools, such ass spearguns,
are handemade by local people

Livelihood Capabilities and Activities

Because of the subsistence nature of livelihoods in the village, all villagers have traditional livelihood capabilities which include the ability to cultivate crops, make essential implements such as fishing spears, and provide shelter and other necessities from the resources to which they have access. These capabilities are taught from a very early age and therefore constitute the basic minimum of livelihood capabilities.

In addition to these traditional capabilites, local people recognise the importance of exploiting new opportunities as they arise, as is the case with education, outside income earning opportunities and development funding. In this respect a number of local people are actively exploiting

opportunities presented from outside, including educational opportunities (all children over five and under eleven years of age attend school in the mornings), and those provided by outside development agencies, such as the World Heritage Project. In this case, one family was constructing a number of visitor 'chalets' by the lake, and had plans to construct another in the forest further inland. One male villager was also experimenting with outside carving styles (including crocodile motifs from other provinces in Solomon Islands) to enable increased sales of carvings to tourists both on the island and in Honiara. These same people were also selling coconut crabs to exporters in Honiara. Women in the village also made a small number of woven mats and baskets for sale to visitors. One local concern was, however that young women were becoming less interested in learning traditional weaving techniques with which to produce both usable and saleable items.

The primary livelihood activities undertaken by villagers are subsistence gardening and fishing in the lake and to a lesser degree the sea. All households have at least two garden areas where they grow the local staple crops of taro and sweet potato, and an area of coconut which they own, and the planting of which represents a key long term livelihood investment. Appendices 1h and 1i present the results of village garden drawings undertaken for this survey, and respectively show taro (Plate Twelve) and potato gardens (Plate Thirteen). The taro garden is located approximately two kilometres from the village along the road leading to West Rennell, and is planted in very wet and dark peat-like soil.

Conversely, the potato garden is situated in a depression in the coral rock where porous light brown soil has collected. The process of preparing the garden consists of clearing and burning the primary growth (see Plate Fourteen), or clearing and mulching regrowth if it is an existing garden area (Plates Fifteen and Sixteen). New crops are then planted in the garden, often staggered to provide variable harvesting times seven to eight months after planting (see calendar, Appendix 1g). Taro is often

planted with edible cabbage fern (see Plate Sixteen) and some standing trees, particularly those providing edible fruits or leaves, are left standing to provide shade and shelter. The fallow period for taro gardens ranges from one to two years depending on the fertility of the soil. This is judged by the time taken for regrowth to reach a height of one to two metres.

Subsistence labour demand, according to villagers, is fairly constant year round, although as the seasonal calendar shows (Appendix 1g) it tends to be higher in the September-February period. This is when planting periods tend to overlap, particularly between crops such as taro, potato and pana. This is also the period when food supply is at its shortest, with villagers becoming increasingly reliant on imported foodstuffs such as rice and tinned fish.

Although the women's group from this village did not complete a calendar, the division of labour within households appeared to be relatively equal. Both men and women took part in gardening activities and house construction, but men tended to undertake fishing activities, while food preparation and other domestic work, such as clothes washing, were the sole domain of women. Fuel collecting activites, particularly for firewood, were undertaken by both groups, although heavier activities such as cutting logs was done by men. Child-rearing was primarily a female activity undertaken by mothers, elder daughters or close female kin, although the men were not entirely excluded from this work.

Differences between groups (individuals or households) within the village tended to be dependent upon their ability to undertake employment activities inside and outside the village. Although there was little apparent stratifying effect due to this, it was apparent that an individual's or family's economic position was dependent upon their position in the life-cycle, and this had some relationship to the relative security of their livelihood. Those individuals or households who had been able to undertake paid

employment at some stage were therefore in a more secure position than those who had not.

Village Livelihoods: Equity and Sustainability

Opportunities for the derivation of traditional livelihoods are, as perhaps can be expected, fairly equitable. As has been suggested, all people have access to some land with which to grow crops, and have access to common property resources as provided by the lake and forest. Gender differentiation does exist, however, and the fact of patrilineal and patrilocal kinship ties and land tenure does suggest that women may be disadvantaged with respect to ownership and control over non-common property resources. Men also tend to retain control over the acquisition and use of imported technology such as chainsaws, fibreglass canoes and fishing nets. As was the case with at least one household in the village, the presence of items such as sewing machines, soap, gas stoves and aluminium saucepans suggests that the acquisition of technology for 'women's' tasks does occur. It is difficult to determine whether these actually make women's tasks easier, or in actual fact increases their workload, such as might be the case with sewing machines (see for example Sheyvens,1995).

Although the gender distribution of income from cash-earning activities was difficult to determine, it was apparent that both males and females had either access to income that was available within a family or household, or had some say in how that money was spent. It also appeared that although women may have some say in expenditure on small consumer items, such as food or clothing, the larger expenditure decisions were taken by the men.
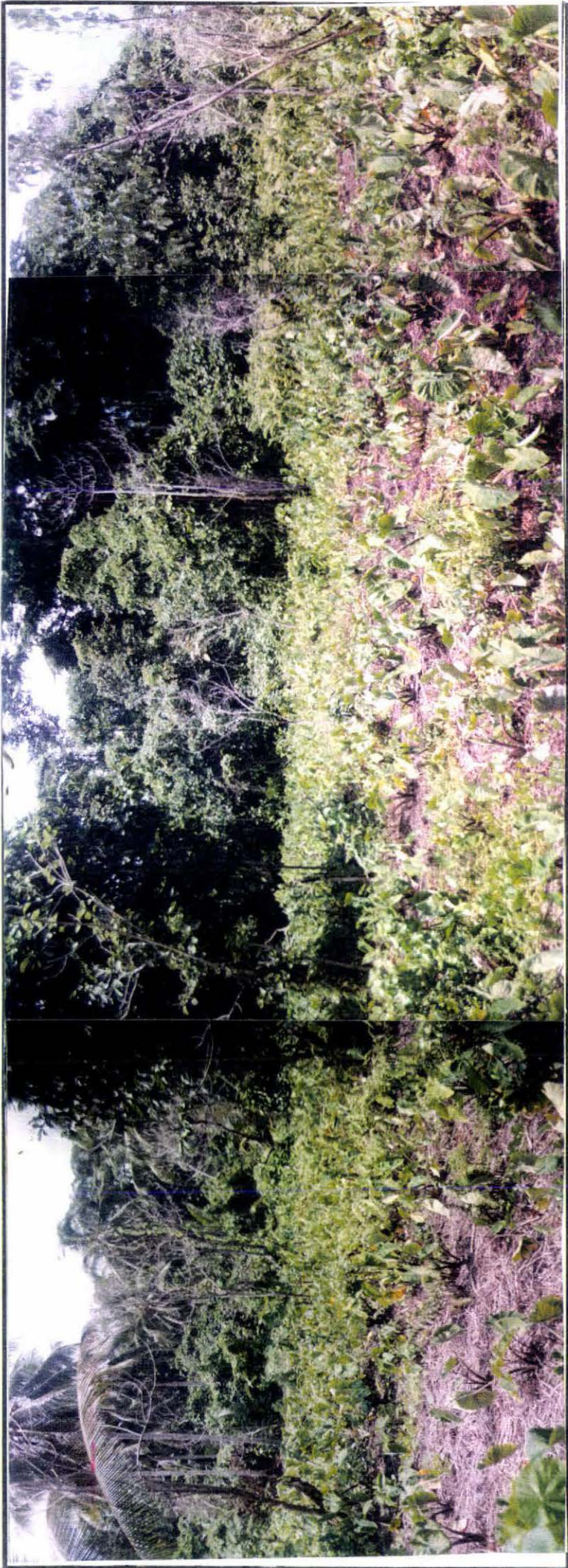
Plate Twelve:
Taro garden:

Plate Thirteen
Potato garden

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Plate Fourteen:
Recently cleared potato garden showing exposed coral rock and paucity of topsoil

Plate Fifteen:
Recently cleared taro garden. Bracken fern used as indicator of fallow period.

Plate Sixteen:
Taro garden mulched with Bracken and planted with edible fern

Plate Seventeen:
Niupani Village. Permanent house and cyclone proof water tank

The key differences in the distribution of both income and resources/assets between households appeared to be between those which currently had access to income earning opportunities, or had done in the past, and those which did not. The ability to gain cash income from any source (including cash grants from development agencies) allowed people to purchase consumables, invest in labour saving technology (chainsaws, outboard motors and fibreglass canoes) and build with permanent construction materials such as roofing iron and glass louvre windows. Access to cash, perhaps more importantly, allowed people to invest in further education for their children, and thereby greatly increase their chances of procuring paid employment in the future. In this respect, however, only one household indicated that they wished to send one of their children to secondary school.

The environmental impact of livelihood activities in the village were minor, but were increasing with the use of imported technology and other goods. A number of environmental impacts were noticeable at the time of this research. First, according to villagers the number and average size of fish in the lake was declining to the extent that, given its status as a subsistence food source, had reached almost critical levels. Although it was difficult to pinpoint the exact cause of this, the use of nylon nets and spearguns by local people may have led to a dramatic increase in the number of fish taken. The use of nets had declined as the fish became too small for the nets to catch.

Additionally, local people suggested that the level of pollution in the lake was increasing, and that this was both killing the fish and the food which they fed on. A recent successful malaria eradication programme had used DDT to eliminate mosquitos, and this pesticide is also used by people in the village to kill the small fireant: an introduced pest which has become a major problem in the area in recent years (the consensus among islanders and outsiders was that these ants had arrived with a shipment of timber from another island in the Solomons). The increasing use of outboard

motors on the lake may also be contributing to declining water quality, and a response to this by the local council of chiefs has been to limit the size of ouboards on the lake to 25 horsepower.

Second, local people have cleared many of the islands around the village of bush and planted coconut palms in its place. The root system of the coconut palm is insufficient to maintain soil and as such many of these islands, which have been formed by the build-up of detritius on coral outcrops, are eroding away.

Third, two introduced insect species have become a major concern for village livelihoods. These include a small grasshopper-like insect which appeared after the cyclone in 1993, and is proving to be devastating to taro crops, and a small slug which eats the leaves and tubers of potato and pana crops in village gardens, as well as clothes and paper. These two pests represent a major threat to the traditional livelihoods of villagers.

Although not considered a problem by local people, environmental quality is also being compromised by the importation of food products, the packaging of which is a common sight lying in and around the village, and in the lake. Of particular concern is the dumping of used batteries and tin cans in the lake.

The impact of village livelihoods on global sustainability is difficult to judge, but an initial appraisal would suggest that this is almost neglible. Local people clear only small areas of forest for gardens, and the burning of these areas and of fossil and renewable fuels is such that both total and per capita impact on global pollution would be small to the extent of being infinitesimal.

These environmental issues also impact on the social sustainability of local livelihoods, and specifically the ability of local people to cope with stress and shocks. The declining security of food supply from traditional

sources forces local people to be more reliant on imported goods. Difficulty in obtaining these, either because of their expense or uncertainty of supply, places the food provisioning (and therefore the primary) component of livelihoods in a precarious position. This was indeed the case at the time of this research when food was in very short supply. The reaction of local people was to increasingly depend upon common property food resources from the forest. One respondent indicated that in times of shock, such as after a cyclone, local people have little choice but to rely on relief provided by the government and overseas aid agencies, as was the case after the 1993 cyclone.

Many aspects of social sustainability are also exacerbated by increasing population, as indicated by the statistics presented earlier in this chapter, and by the number of young people in the village. This places pressure on existing facilities such as water supply, waste disposal, food supply and other locally available resources (particularly for building and canoes). Villagers indicated that the number of people wanting to build and repair houses resulted in a shortage of pandanus for thatching. In this respect attempts had been made to import sago palms, a typical house thatching resource in other parts of Solomon Islands. This had been largely unsuccessful due to the length of time taken to grow these in the thin soil of Rennell to the stage where they produce sufficient thatch.

The development priorities on both the social and resource maps of the men (the women did not complete this exercise) are indicative of social and resource (and hence livelihood) problems in the village. Presented in Table 6.3. these indicate what village people (specifically the men, although the women also had some input in determining these) feel are their most pressing needs. In some way they all relate to problems associated with livelihoods in the village, particularly to livelihood necessities such as food and shelter, but also to the ability of local people to generate cash income.

Social Map Development Priorities:

1) Roofing iron
2) Timber for Houses
3) Water tanks
4) Health clinic
5) Two-way radio
6) Proper slab toilet
7) Guest house
8) Gas stoves
9) Generator for lighting and fridge
10) Cyclone shelter

Resource Map Development Priorities:

1) Farming tools
2) Pest control
3) Vegetable seeds
4) Fencing for pigs and chickens
5) Market for produce and resources

Table 6.3: Tevaitahe Village Development Priorities
Source: Men's Social and Resource Maps
(Appendix 1a and c)

SUMMARY: TEVAITAHE VILLAGE LIVELIHOODS

The results of the village survey presented above give an indication of the livelihoods which villagers are able to contrive and maintain. These livelihoods are based, but not solely reliant upon, traditional subsistence activities which include gardening, fishing and the collection of other resources from the surrounding forest. In addition to these activities, villagers exploit cash-earning opportunities that are available, including the production of crafts for the Honiara tourist market, the sale of oconut crab to outside buyers, and travel to other parts of Solomon Islands to exploit employment opportunities.

Of central importance to these activities are the system of land tenure and other kinship ties which both ensure access to resources, and provide a support network both on a day-to-day basis and in specific times of need. In many instances, the ability for an individual to gain the skills necessary

for outside employment, and to travel in search of such work, is made possible only with assistance from kin.

In contriving and diversifying livelihoods, villagers in Tevaitahe are constrained by location and available resources. Although the recent opening of the road to the lake has improved communication with the outside world, the lack of, and cost of, transportation to both West Rennell and Honiara make it difficult to exploit opportunities presented by this.

The desire of local people for income is also representative of villagers' recognition of the need for the inter-generational diversification of their livelihood capabilities, particularly through secondary education in other parts of Solomon Islands. In this respect there is an apparent inequality in non-traditional livelihood activities between those people who are in a position to exploit these opportunities and those who are not.

Villagers, in general, through a range of activities, are able to contrive sufficient livelihoods, but ones which are characterised by increasing insecurity as a result of both local and outside influences. These include local environmental decline and social change, the desire for imported consumer goods such as clothing and food, and education which although enhances individual's and household's capabilities, also increases people's knowledge of, and desire for, different lifestyles.

CASE STUDY TWO: NIUPANI VILLAGE

Approaching Livelihoods

Niupani village is located approximately 20 minutes by canoe from Tevaitahe village down the southern shore of Lake Tenngano. The first impression of the village is again of a tropical paradise, a small cluster of houses nestled on a flat area beside the lake. The village itself appears neater than Tevaitahe, with more houses completed using traditional

materials, and less apparent cyclone damage. Upon saying this, however, it is still apparent that many villagers are continuing to rebuild houses, using permanent materials, after the 1993 cyclone (Plate 17).

The village itself consists of 33-34 dwellings (the figures presented by the men's and women's maps respectively - see Appendices 2a and 2b), and between 15 (men) and 20 kitchen buildings (women). A summary of the data collected in the social mapping exercise are presented in Tables 6.4 and 6.5.

Population, as indicated by the women's map, stands at approximately 135 people of which 70 (52 percent) are males, 65 (48 percent) are females, and 56 (41.5 percent) are under the age of 16 years. This compares to data from the 1986 census which indicated a population of 140 persons (78 males and 62 females), and suggest a growth rate over the ten year period of -0.36 percent (again these figures and comparisons are indicative and approximate rather than certain and precise). The indication from the women's social map is that three families are presently living and working in Honiara, or elsewhere in Solomon Islands.

On the whole, Niupani appears more prosperous than Tevaitahe, even accounting for the strong kinship and religious ties which exist between between the two villages (both are members of the South Seas Evangelical church). Villagers believe that all of their dwellings are in need of completion even though visual evidence suggests that many, and particularly those constructed of traditional materials, appeared complete.

This may suggest that dwellings built of permanent materials may be the standard by which local people judge their housing quality. Subsistence agriculture and food collection remain the primary livelihood activity in the village. There are, however, more 'paid employees' in the village than was the case at Tevaitahe. These include the village school teacher, a villager who is a teacher at the East Rennell Rural training centre, located near

Tevaitahe village, and the provincial government member for the East Rennell ward.

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Population: respondents did not complete this exercise

No. of dwellings              33
No. incomplete                33
No. of kitchens               20
       -with gas              6
       -with kero             5
       -with fire             20
No. of water tanks            10 (incl. 4 at the EC school)
No. of h/holds with pigs      6
No. of h/holds with chickens  all
No. of chainsaws              4
No. of outboard motors        10
No. of fibreglass canoes      4

Development priorities:
       1 - Church
       2 - Toilet
       3 - Drinking water
       4 - Playing field
       5 - Road extension and improvement
       6 - Laundry facilities
       7 - School completion
       8 - Community centre
       9 - Health aid
       10 - Offshore island development (tourism)
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Table 6.4: Men's Basic Village Data: Niupani Village
Source: Men's Social Map (Appendix 2a)

People in Niupani have also taken part in a fishing project located on the sea coast at Tuhuggaggo (Tuhugago), set up in 1990 with assistance from the Provincial Development Unit of the central government, although the indication was that this was no longer in operation. There are also two stores in the village which sell consumer products such as rice, material, tinned fish, sugar etc.

Again many coconut palms have only recently recovered from the 1993 cyclone, although the consensus among villagers was that the village fared better in this event than other villages in the area, and this may in part account for the more prosperous appearance of the village.

Population:

Males	70 (52 % of total)
Females	65 (48%)
Boys (>16yrs)	29 (21.5%)
Girls (>16yrs)	27 (20%)
Elderly	?
Total Population	135

Handicapped people	2

No. of dwellings	34
No of dwellings incomplete	34
No of empty houses	3 (living elsewhere)

No. of kitchens	15
-with gas	6
-with kero	7
-with fire	15

No. of h/holds with pigs	9
No. of h/holds with chickens	all
No of chainsaws	3 (1 private, 1 community, 1 school)
No. of outboard motors	6
No. of fibreglass canoes	5
No. of outrigger canoes	14

Development priorities
      1 - Church
      2 - Drinking water
      3 - Laundry water and facilities
      4 - Kitchens (improve facilities)
      5 - Toilets
      6 - Lake (food and water quality)
      7 - Playing field (women's)
      8 - Schools (complete)
      9 - Wharf
      10 - Playing field (men's)

Table 6.5: Women's Basic Village Data: Niupani Village
Source: Women's Social Map (Appendix 2b)

VILLAGE LIVELIHOODS

Claims and Access

Niupani villagers exhibited claims and access to livelihood and other resources of a similar nature to those in Tevaitahe. It was evident that because of kinship ties between households in these two villages, there

were many mutual obligations between them which supported not only these claims and access but livelihoods generally.

As was the case in Tevaitahe the basis of livelihoods in Niupani rested on access to land with which to grow subsistence crops. In this sense the land tenure system in the village was identical to Tevaitahe, with land use being ascribed as a matter of right according to an individual's ancestry, and on a patrilineal and patrilocal basis. As is indicated by the village resource maps (Appendices 2c and 2d) the areas where villagers have access to garden land and forest resources are considerably spread out around the lake. These areas include a number of the small islands on the lake, forest and garden areas on the opposite shore from the village, and access to areas of common property, particularly the lake, from which to gather food, such as fish (tilapia), eelfish and coconut crab (kasusu). Areas of coconut plantation are also widespread, situated around the lake area and on the southern sea coast, as are areas for sea fishing which extend around the entire eastern end of the island.

An important note with respect to land in Niupani relates to the relative availability of suitable taro growing swamp between villages. This is considerably more abundant at the western end of the lake near Tevaitahe than it is near the other villages. In this respect the area around Tevaitahe (see Tevaitahe women's resource map: Appendix 1d) is used by people from other villages to grow taro even though they may not have ancestral rights to that land. This indicates that, particularly with respect to traditional subsistence activities, there is a factor of local livelihood cooperation between all four villages at the lake.

Kinship ties also play an important livelihood function within the village. In this respect there is a mutual sharing of assets and resources between individuals and households within the village. This is more the case with respect to consumables such as food, soap and clothing than with more expensive assets such as chainsaws, stereos, and fibreglass

canoes/outboard motors. As indicated in the social maps (and also see Tables 6.3 and 6.4) there are a number of chainsaws, fibreglass canoes and outboard motors in the village (once again the men's and women's figures vary considerably). The standard rate for the hire of a chainsaw, for example, is $SBD50 per day, which effectively puts these outside the reach of most villagers. This is in part the reason why permanent material houses take considerable time to construct, given the need for chainsaws to mill timber, and also the availablity of fuel and oil to run these.

Claims and access to both agricultural land and common property resources are essential aspects of livelihood strategies in the village. All housholds depend on these, albeit to differing degrees, for food and other resources, both on a day-to-day basis, and in time of stress and shock. Villagers may also call on claims to, and have access to, resources from both outside the village and outside the locality. These include development and agricultural assistance from both national and provincial agencies, NGOs and international development and relief organisations.

Again the suggestion was made that in times of severe stress and shock, such as is the case after a cyclone, villagers increasingly call upon assistance from the government for food and shelter. Evidence of development assistance from outside is given by the Niupani fishing project located on the sea coast at Tuhuggaggo to the South of the village. A grant of $SBD21,000 was received from the Provincial Development Unit of the National Government to set up this project, and intial running costs were provided by a bank loan. At the time of this research, however, there was little evidence that this project was still in operation, and the men's resource development priorities indicates that this is in need of further development (see Table 6.6).

The East Rennell community as a whole (consisting of all four villages including Niupani) also works with government extension officers, particularly in the field of agriculture, to gain information on gardening

techniques, new crops or crop varieties and the possibilities of marketing agricultural produce. Given the nature of the geology of Rennell, and particularly its lack of a good soil surface and its isolation from markets, villagers accept that there is limited potential for this sort of development.

The possibility also exists for villagers to travel to both other parts of Solomon Islands and the world in order to undertake further education and training. For example one individual from Niupani was undertaking medical training (Doctor of Medicine) at the University of the South Pacific in Fiji at the time of this research, and another was training to be a teacher at the Solomon Islands College of Higher Education (SICHE) in Honiara.

People in Niupani also appeared to have a greater ability to exploit employment opportunities in other parts of Solomon Islands than was apparent in Tevaitahe. The women's social map (Appendix 2b) suggests that no fewer than three families were doing so, but anecdotal evidence also suggested that a further two individuals were also working in paid employment in other localities. Occupations indicated by villagers included secondary teaching and a microscopist in a health clinic.

Stores and Resources

Stores of wealth in the village were again minimal as was the case in Tevaitahe, but was nonetheless a great deal more compared to that village. A number of households in the village owned tape decks and radios, all had chickens and between six and nine owned pigs. Perhaps the most obvious store of wealth, however, was the number of fibreglass canoes and outboard motors in the village, which numbered between four and five, and six and ten respectively[3]. These represent a considerable asset although one which is perhaps difficult to realise in times of financial need.

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[3]There was some indication that the figures presented by the men's maps were indicative of the whole of the East Rennell rather than just Niupani village.

Additionally, the number of gas and kerosine stoves in the village also indicates a store of wealth, but again one which does not represent a saleable asset which can be sold in time of crisis. The number of these assets present in the village is suggestive of a greater ability among residents, or certain residents, to exploit income earning opportunities.

In terms of subsistence resources, the resource maps (Appendices 2c and 2d) and village transects (Appendices 2e and 2f) indicate a wide range of resources which villagers use to contrive a livelihood. The transects in particular suggest that the forest is a store of a number of both edible and non-edible resources, including wildfoods, trees for constructing, cladding and roofing houses, for starting fires, parcelling food and making and dying woven mats and baskets. A number of 'resources' in the forest are also used as indicators for the use of other resources, particularly for planting and harvesting crops, and for fishing.

The photo ranking exercise undertaken in this village (Appendices 2j and 2k) also indicated the importance of resources in the livelihoods of villages, and suggested differences in these between men and women. The men, on the whole, indicated that physical aspects of the village were important, such as the track to the sea, caves used as shelter, new school buildings, water tanks, and the lake as a potential area of development. The women, on the other hand, were almost totally concerned with sources of food and other household resources (particularly pandanus used for housing, mats and baskets).

The forest is also the repository of a saleable resource in the form of the coconut crab (kasusu), which is sold by a number of villagers to exporters in Honiara for approximately $SBD20 each (plate 18). This occurs throughout the year with the exception of the spawning season, which runs from January to March, when the crab migrates to the sea to lay eggs.

The lake is again an area of common property which provides a number of resources to villagers with which to contrive a livelihood. Primary among these is food, in the form of fish and eelfish, but the lake also provides laundry and washing facilities, and is the primary transport link between villages and to distant gardens.

Livelihood Capabilities and Activities

The primary livelihood activity undertaken by villagers is subsistence gardening and collecting forest resources, and villagers all have, and are taught from a very early age, capabilities to this end. This activity is undertaken by all villagers regardless of other, paid, employment that they may have, and entails the cultivation of the staple crops of taro, coconut, potato and pana, lesser crops such as pineapple, tomatoes, and watermelon, and the collection of common resources such as fish and other materials. All villagers have capabilities to undertake this activity.

Appendices 2h and 2i present garden drawings of typical household gardens which provide sufficient taro for a period of approximately two months. Both gardens are located twenty to thirty minutes by dugout canoe from the village, and, on average, will be tended three to four times per week. Because of food storage difficulties in a tropical environment with no electricity, food must be harvested no more than two days before it is eaten, or in the case of fish and other non-storable goods, on the day it is eaten. With respect to sea resources, it is necessary for individuals or families to travel to the sea shore in order to consume these. In this case, young people may travel to the sea as a group, remain there for a number of days, and make use of food resources available, but it is uncommon for an entire family with small children or elderly members to do this.

Both men and women undertake gardening activities, including clearing garden areas, preparing the soil and planting and harvesting. The men

tend to be involved in the construction of houses (particularly the framing and roofing), although women assist with the preparation (drying and sewing) of pandanus for the clading and roofing of traditional housing. Domestic work, such as food preparation, laundry and child rearing is almost totally the reserve of women.

There was little evidence of men in the village undertaking carving for sale to the tourist market, but women, particularly older women, were active in the production of woven mats and baskets both for sale and local use. Two households in the village operated small stores with various consumables for sale (commonly rice, instant noodles and tinned fish), and one household acted as a store for fuel (kerosine and petrol), although at the time of this research this was out of stock.

As has already been suggested, villagers appeared more able to exploit opportunities for expanding and enhancing their livilhood capabilities, particularly through continuing education and training outside the village. A number of young people were either undertaking training (including teaching and medical) or were engaged in paid employment in other parts of Solomon Islands and the Pacific. In this regard it is important to note here that training represents not merely the capability development of an individual, but also a livelihood security decision by their parents for the whole family. It is expected that once working an individual will support both their parents (as is common with all people, not just those who have paid employment) and other members of their immediate and extended family.

Many livelihood activities within the village are determined by the planting and harvesting cycles of subsistence and wild crops, which are in turn determined by weather and astral cycles. Appendix 2g presents a 'custom calendar' as drawn by the men of the village, and suggests a store of knowledge built up over a long period, and still used in the present to determine livelihood activities.

Labour demand for subsistence activities tends to be fairly constant year round given the need for a continual supply of food. As was the case with Tevaitahe peak periods tend to be when crop planting time overlap with each other, and with other activities such as house construction and the harvesting of crops and forest resources (particularly coconut crab).

Village Livelihoods: Equity and Sustainability

The ability of individuals and households to contrive and maintain a traditional subsistence livelihood in Niupani appears to be fairly equal. All people have access to land with which to cultivate crops, and are ascribed use rights to common property resources in both the lake and forest. Kinship and other customary support relations also tend to ensure a fairly equitable distribution of subsistence resources. Although there is an apparent gender based division of labour, this relates primarily to the provision of domestic labour. Both men and women are involved in subsistence gardening and provisioning activities, while the men undertake fishing duties, and the women the domestic duties of food preparation and child rearing. Men, however, are not totally excluded from the supervision of small children and babies.

Where inequity arises in village livelihoods is with respect to the ability of individuals and households to exploit opportunities for paid employment, and the benefits this has, firstly, for the provision of imported goods (such as food, transport and luxury items such as tape decks), secondly, for the ability to further enhance individual or household capabilities, and, thirdly, in enabling individuals, households and families to exploit further opportunities as they arise. In this respect, it was apparent in the village that those people who were able to exploit new opportunities were those who were able to meet the costs involved in doing so. The exploitation of coconut crab, for example, entailed the ability to build storage facilities, travel around the lake in search of the crab and transport the crabs back

to the village. In this case those people who had access to fibreglass canoes and outboard motors were in a better position to exploit this opportunity. The same could be said for opportunities presented by the World Heritage project, which, although at an early stage, could be seen by those with financial resources as a possible income generating opportunity, and who were in a better position to exploit these.

In terms of environmental sustainability, Niupani village livelihoods appeared little different from those in Tevaitahe. Subsistence livelihood activities appeared to have little environmental impact as garden areas were cleared, used for one or perhaps two crops, and then allowed to regenerate. In the case of taro gardens, cleared areas were used for one crop and then left fallow for a minimum of two years before being used again. The use of forest and other common property resources was at a level which suggested that little environmental impact was occurring. The exception to this was the fishing of tilapia in the lake, the levels of which were apparently critically low, and the use of firearms to shoot birds which suggested a potential increase in pressure on this resource. The cause of decreasing fish stocks was difficult to determine, but the indication from a number of villagers was that pollution levels in the lake were increasing, with one suggesting that the cause lay with a number of sunken Catalina flying boats in the lake. The use of nets for fishing by all villages around the lake suggests that part, or all of the problem may also simply be overfishing.

Another key area of concern with respect to the environmental sustainability of livelihoods was the impact that the increasing use of imported and packaged goods, and the increasing use of outboard motors were having on the local environment. The lake in particular has tended to be viewed as a waste disposal receptical by local people, and while subsistence waste tends to be biodegradable, imported packaging, batteries and tin cans are not. Although perhaps not yet at critical levels, the amount of such waste is nonetheless visible.

One environmental problem encountered by villagers, which may also be viewed as an aspect of social sustainability, is the appearence of a small grasshopper like insect which destroys taro plants (see Plate 19), and a small slug which eats potato and pana. Although villagers are still able to cultivate these crops, yields are declining forcing increasing dependence on imported goods. While undertaking this research the monthly shipping service to the island was cancelled placing the availability of even imported goods in doubt. The result was a serious food shortage both in the village and on the island as a whole.

Aspects of social sustainability were closely related to environmental aspects, particularly with respect to the security of subsistence food supply. Decreasing yields of staples and the unavailability of imported food meant that locals must either rely on wild foods, and thereby place increasing pressure on these, or simply stint on consumption. As villagers tend, on average, only to eat once a day in an 'average' situation, this latter solution is perhaps less applicable than may be the case elsewhere. The difficulty in transporting foodstuffs to the island is exacerbated when shipping services are unavailable. The cost of air freight is beyond the means of almost all villagers for almost all goods (the exceptions being light items such as dried noodles). Villagers, however, do cope with these stresses for the simple reason that they have no choice. Those people that have stores of food (that is the store owners in the village) are able to draw on this resource, but as is often the case the amount of stock is not great, and is usually sold or given to other family members or sold to village residents.

In the case of shocks to village livelihood systems, as in the event of a cyclone, villagers tend to rely on available wildfoods and/or assistance from relief agencies such as Red Cross, family members who have paid employment in other areas of Solomon Islands and the government.

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Plate Eighteen:
The Coconut crab (Kasusu) is a valuable source of food and income for both Tevaitahe and Niupani

Plate Nineteen:
A small recently introduced insect which devastates Taro crops is a major threat to local livelihoods

Social Map Development Priorities:

1) Church
2) Toilet
3) Drinking water
4) Playing Field
5) Road extension and improvement
6) Laundry Facilities
7) School completion
8) Community centre
9) Health aid
10) Offshore island development (tourism)

Resource Map Development Priorities:

1) Road extension and improvement
2) Village education and training
3) Roadend guesthouse
4) Development of resources and activities for tourism
5) Garden improvement and pest control
6) Fishing areas and equipment
7) Eelfish business operation
8) Hilltop viewing area
9) Transport

Table 6.6: Development priorities: Niupani Village Men
Source: Men's Social and Resource maps: Niupani Village

Social Map Development Priorities:

1) Church
2) Drinking water
3) Laundry water and facilities
4) Kitchens (improve facilities)
5) Toilets
6) Lake (food and water quality)
7) Playing field (women's)
8) Schools (complete)
9) Wharf
10) Playing field (men's)

Table 6.7: Development Priorities: Niupani Women
Source: Women's Social Map

The social and resource development priorities indicated by villagers and presented in Tables 6.6 and 6.7[4] (see also appendices 2a, 2b, 2c, and

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[4]The women did not complete the resource development priorities activity for this survey as they were unsure what I meant by this part of the exercise.

2d), indicate the areas where villagers have most concern, and also reflect aspects of social and environmenal sustainability. In this respect, water quality and availability were a common concern. Drinking water was provided by rainfed tanks, cooking water by a small fresh (although tasting slightly of soap) spring at the lakeside, and laundry was done in the brackish and often murky water of the lake. Additionally, toilet facilities consisted of holes in the coral rock in bush areas located beside the village, and the consensus was that these were inadequate.

The priority ascribed to the completion of the school suggests that villagers, on the whole, regard education as important in the development of livelihood capabilities, particularly as it potentially leads to income earning opportunities outside the village. The School buildings, designed and built to withstand cyclones, also serve a safety and security function given the ever present prospect of cyclones. The indicated desire to develop income generating schemes within the village also suggests a desire by villagers to enhance their livelihood opportunities within their own environment.

SUMMARY: NIUPANI VILLAGE LIVELIHOODS

The results of the surveys presented above give an indication of the nature of livelihood systems as they operate in Niupani village at East Rennell. Primarily, these are based around the traditional subsistence activities of gardening and collecting food and resources from the surrounding environment. To this end, a system of reciprocity and mutual kinship obligations operates which ensures that every household has access to sufficient resources with which to contrive a basic livelihood.

It is apparent, and is perhaps becoming more so, that outside influences play an important role in determining village livelihoods as a whole, but to varying degrees between households within the village. The survey results

also suggest that certain households are better positioned to exploit new opportunities than are others, and that this is the case for both opportunities within the village, and those presented from outside which entail the migration of people to other localities.

Central to an individual's or household's ability to exploit outside opportunities is the skills that they have, which are necessarily a function of the education and training they have been able to obtain, particularly past Form One level. In this respect, the enhancement of livelihood capabilities within the village, and therefore the enhancement and increasing security of livelihoods is to a certain degree dependent upon an indiviual's or family's current situation.

This has implications for the inter-generational sustainability of livelihoods. Traditional livelihood activities are becoming increasingly insecure due to the influence of introduced pests, but the opportunity to exploit alternatives is open to only a small number of villagers, leaving the rest with an insecure future. Although not readily apparent, after a period spent in the village it became obvious that a number of villagers were concerned about the future, both for themselves and for their children.

Again the diversification and enhancement of livelihoods in the village is constrained by location and physical environment. Lack of large areas of arable land around the lake deny the possibility of agricultural development and crop diversification, while transport difficulties both hinder the removal of surplus crops and other goods to markets for sale, and the provision of alternative, imported livelihood necessities. The nature of the local environment, and particularly the lack of soil, indicates that the potential for even mainstream, resource extractive development is not great.

CONCLUSION: TOWARDS AN EAST RENNELL LIVELIHOOD COMPLEX

This chapter has presented the results of research into the livelihood strategies employed by two of the five villages within the intended boundaries of the proposed World Heritage site at East Rennell. Although by no means a definitive study, the results give a good indication of the nature of livelihood strategies employed, the resources available to these, and the opportunities for livelihood enhancement and diversification.

In contriving livelihoods, individuals, households and families are able to call upon use-rights to land and common property resources, and a range of claims and access to these and other resources to ensure that they are able to maintain a living. The traditional system of kinship and community ties appear to support livelihoods by ensuring that individuals and households are able to feed, clothe and shelter themselves, and mechanisms which determine the use of resources also ensure the continued integrity of the resource base upon which livelihoods depend. Given that many of these strategies have been maintained over a long period of time, there appears to be little reason why they cannot be sustainable into the future.

The livelihood system within this area is, however, coming under increasing stress from internal and external environmental and human induced pressures. The two staple crops produced in these livelihoods are currently under threat from pests which appear to have arrived as a result of the cyclone in 1993. Given that these form an essential, if not *the* essential basis of these livelihoods, it can be said that livelihoods at the lake are under threat, although this is perhaps no readily apparent to outside visitors to the area.

Human-induced pressures can also be seen to place increasing stress on livelihood systems at the lake. Increasing population (although not

definite, the figures presented in this survey suggest that some increase is occurring), and the introduction of technology, such as rifles, nylon nets and outboard motors, is placing increasing pressure on resources and particularly on common property resources essential to livelihood strategies. Common property resources also face pressure from both actual and potential exploitation for financial gain, as both the desire and need for imported consumer goods increase.

The problems that local people face, however, continually urges them to search for new livelihood opportunities. This search is to a large extent prompted by outside and imported problems, desires and opportunities, but the success of which is subsequently determined by the internal capabilities, including financial capabilities, which they as individuals and households, and to a lesser extent families, have available to them. In this respect local people's current capabilities largely determine the possibility of enhancing and diversifying these for the future.

The extent of this survey, and the depth of its analysis, is such that the apparent complexity of livelihood systems may only be an indication of an even deeper complexity involving social, environmental and cultural linkages which ensure continued livelihood viability. These linkages are, however, under constant pressure for change from both external and internal sources. It appeared that kinship and social obligations which determine the use of common property and other local resources, were not necessarily ascribed to the use and distribution of imported goods, and particularly non-consumable goods. This suggests that although traditional systems may work to ensure the environmental sustainablity of livelihoods, they do not necessarily ensure the social sustainability of livelihoods, and particularly that relating to the increasing desire and need for imported resources and capabilities.

In this regard there is an indication that traditional resource management systems are sufficient only to the extent that resources are not able to be

exploited for financial gain. In the case of the coconut crab, the possibility of earning cash through the exploitation of this resource places pressure both on it, and on the resource systems which have governed its use in the past.

CHAPTER SEVEN

SUSTAINABLE DEVELOPMENT AND LIVELIHOODS AT EAST RENNELL

INTRODUCTION

The *focus* of this thesis has thus far been on the analysis of sustainable development as it is implemented at a local and practical level, and the reality of the livelihoods of people whom a project aims to assist. The central *aim* of the thesis, however, is to examine the relationship between sustainable development and livelihoods, to determine whether the 'new analysis' of environment and development presented by a livelihoods approach in fact suggests a need for a revision of the way in which sustainable development is operationalised at the local level and, ultimately, theorised and conceptualised at the global level.

To this end Chapter five provided a description of the East Rennell World Heritage project, and was presented as a local level manifestation of global developmental and environmental thinking. The emphasis in that Chapter, rather than attempting to assess the sustainability of the project, was on an analysis of how global theory is transferred to the local level, and as such how this attempts to initiate a change in the circumstances of people in this context. Chapter Six followed by presenting the results of an analysis of livelihoods, and represents the local level context of environment and development as perceived by local people (although admittedly interpreted by the author), and within which the sustainable development project is presently being implemented. The rationale for investigating livelihoods, in the context of this thesis, is therefore twofold: first, to provide an assessment of how local people strategise and derive livelihoods as a basic level of subsistence, and second, to provide a basis from which to judge the impacts of the project on these strategies, and thereby determine the extent to which the project supports and enhances

livelihoods at a level suggested by a sustainable livelihoods approach to environment and development.

The aim of this present Chapter, then, is to investigate the nature of the relationships between the two analytical components of the research. The first of these relationships concerns the linkages between global theory and the local project to determine if the project indeed represents an instance of global thinking transferred to the local level. Secondly, and of central concern to this thesis, is the relationship between the development project and the reality of local livelihoods. In assessing the nature of this relationship we necessarily infer the question of where the development project meets local livelihoods to support and enhance the strategies and opportunities available to local people. The third relationship presented here is an inverse of the second, and can best be described by way of a question: what does the 'new analysis' of environment and development presented by a sustainable livelihoods approach suggest for the design and implementation of sustainable development at the local level?

This Chapter provides an assessment of the implications which sustainable development holds for livelihoods at the local level, and what an analysis of livelihoods means for the way in which global sustainable development theory is implemented in a local context.

THE EAST RENNELL PROJECT AS SUSTAINABLE DEVELOPMENT

Irrespective of the difficulties involved in arriving at a practical definition of sustainability, it was suggested in Chapter Two that there are a number of general principles which indicate what sustainable development might entail. Among these was the contention that sustainable development involved the maximisation of key goals across social, biological and economic systems, or some form of dynamic system of trade-offs between these. The suggestion was that not only were goals within the three systems important for sustainability, but that so too were the inter-

relationships between them. In this sense sustainability involved an attempt to find an equilibrium between the goals of the three systems to promote both developmental 'progress' and environmental conservation.

The questions arise, then, of if and how this conceptualisation of sustainable development is manifested at the local level at East Rennell. The very name of the project, 'the East Rennell World Heritage Project', is initially suggestive that some form of global-local transfer of ideas, resources (physical or financial) and/or authority is taking place. The fact that the World Heritage Convention represents a global conservation initiative, or regime, is indicative that the East Rennell world Heritage project represents an attempt to place global thinking within a local context. As such, although initiated and implemented at the national and local levels, the intellectual impetus or ideology behind the project can be placed within a particular set of ideas concerning the conservation of the environment and the development of human society. The roots of this ideology can be seen to be based in global, and predominantly Western thinking.

Essentially, the World Heritage Convention is a global conservationist instrument and, as such, does not have an inherent developmental quality. It has been promoted simply as a means by which cultural and natural heritage, which is of value to all human beings, can be preserved for the good of present and future generations. In this sense the World Heritage Convention represents a product of environmentalist thinking which was shown in Chapter two to be based primarily within European culture.[1]

[1]Although it is acknowledged here that other cultures exhibit strong ecocentic environmental sentiments, it is suggested that the particular form of environmentalism manifest in the global environmental movement, and particularly that associated with environmental managerialism, finds its intellectual roots in Europe and North America, and is therefore essentially Western in nature (see Chapter two, and Suzuki (1989 and Suzuki and Knudson(1992) for an assessment of 'other'cultures environmental thinking).

Within the context of East Rennell, however, there is a recognition that local people must benefit in some developmental way, such that they are not materially disadvantaged by this form of conservation. In this respect the project at East Rennell can be seen to have elements of the developmental and environmental intellectual traditions which were seen in Chapter Two to provide the basis for the emergence of the concept of sustainable development at the global level. It is therefore prudent to assess the extent to which these two traditions are present within the project, and how they have been integrated at the local level to promote sustainable development.

Environmentalism

As has already been suggested, the World Heritage Convention is primarily a global conservation instrument. The nature of this, and of conservation in general, is of some form of 'locking-up' of resources or restricting and managing the use of these such that the integrity of the environment as a biological system remains intact for the foreseeable future. As we saw in Chapter Two this particular view of the environment is based within an ecocentric mode of environmentalism which holds nature as worthy of preservation on its own merits, and places humans within the environment rather than separate from it. The conservation component of the project thus reflects the current thinking about sustainability at the global level which Adams (1990) and O'Riordan (1981) suggest is the result of green movements in Europe in the late 1960s and early 1970s, and the gradual emergence of political environmentalism at the global level.

In this respect the implementation of the World Heritage Site at East Rennell is promoted as a means by which a unique and largely pristine environment may be preserved for the good of humanity on a global scale. Although the site has not at this stage been officially recognised as a World Heritage Site, the fact that an attempt to gain World Heritage listing is being made is in itself indicative of the importance which has been

ascribed to the East Rennell environment on a global scale, but which is ultimately transferred to, and operationalised at, the local scale. The conservation initiative being attempted at East Rennell effectively globalises that environment by stating that it has importance for global humanity.

The initiation of a conservation regime, such as is the case at East Rennell, thus represents a transference of global environmental ideals to the local level. The conservation component of the project attempts to put in place structures of environmental management (which themselves reflect a technocentric mode of environmentalism (O'Riordan, 1989) to ensure that the environment, and resources within it are not degraded to the extent that they become unable to operate as a system, and ultimately unable to support human and other life. In this respect the World Heritage site represents the implantation of environmental management ideals (as distinct from actual physical resource management systems) over and above those already present in the local context. It is therefore implicit within the project that conservation necessarily entails the management of the environment and human interaction with it. The suggestion is that by using the traditional resource management systems of local people, global conservation ideals may be transferred to the local level in a culturally sensitive way.

There is little recognition, however, that global environmental ideals may not necessarily be synonymous with local environmental and developmental needs and aspirations. The implementation of a locally based but globally inspired conservation strategy therefore has the potential to generate a conflict of interest between what outsiders deem to be a necessary level of conservation for the area, and that determined by local people as they continue to provide for their livelihoods.

Subsequently, and as is recognised by the project, developmental objectives assume greater importance given the necessity for local people

to live within the conservation boundaries presented by the World Heritage site, and continue to derive livelihoods from their immediate environment. In line with this recognition, the project also attempts to initiate some improvement in the lives of local people by implementing development initiatives which make use of the fact of the conservation involved in World Heritage listing.

Developmentalism

As has been suggested, the development component of the East Rennell project attempts to implement strategies which improve the opportunities available to local people, while ensuring the sustainable utilisation of resources. The focus within the project is on using the event of World Heritage listing as a catalyst for the promotion of the area as an ecotourism destination. Development initiatives thus involve the promotion of businesses for the provision of goods and services associated with the needs of an expected influx of tourists wishing to view the site. At a fundamental level, therefore, the particular development initiatives being attempted in this project involve the promotion of income-generating schemes to provide local people with cash to meet their needs. These are in turn based on the 'value' presented by the conservation component of the project, and, more specifically, the value which outside and predominantly First World tourists place on areas of natural beauty and environmental integrity.

In this sense the project as a whole, irrespective of the independent value people place on the conservation of the environment for its own sake, represents the commodification of that environment from which can be derived commercial value. This, as we shall see later, is of direct significance to local people as they attempt to derive livelihoods from their immediate environment. It in fact represents a commercial capitalisation of that environment which is largely alien in nature to the traditional livelihood capitalisation which existed beforehand, and which to a certain degree

continues to exist. In this respect the development component of the project attempts to integrate the global environmental value associated with World Heritage listing into the local economic system at East Rennell. The result of this is to effect an integration of this local economy into the global economy by attempting to provide cash earning opportunities based on the global tourism market and the ecotourism niche market within that.

As the project is currently at an early stage it is difficult, if not impossible, to draw conclusions as to the success of this component in meeting its intended goals. Success will be largely dependent on how East Rennell is viewed by the global tourist industry, and specifically tourism consumers, as a destination. The stimulation of the local cash economy will be dependent upon inflows of tourist dollars from outside Solomon Islands (and internal flows of tourist dollars, although it is assumed that these will be minor), and as such will be dependent upon wider national tourism strategies and global consumer preferences.

The nature of these development strategies do give some indication, however, of the particular ideas upon which these are based. The implicit suggestion within the development component of the project is that 'development' necessarily entails the promotion of income generating schemes, and a subsequent stimulation of the local cash economy to provide local people with sufficient income to meet their day-to-day needs.

As such the East Rennell project largely centralises economic concerns within the development process, which is again indicative of a particular view of what constitutes development and underdevelopment, and the causes associated with these processes. As we saw in Chapter Two, there was, and continues to be, a widely held belief that people in the Third World are poor simply because they do not have enough money with which to meet their day-to-day needs. At a very simplistic level this may be true, and certainly local people at East Rennell are well aware of and desire the benefits associated with a cash income. What is not clear,

however, is whether the desire of local people for cash income is an indication of a deeper desire for the trappings of a Western economic lifestlye, including imported commodities such as food and clothing, or whether it in fact reflects a response to increasing insecurity within traditional livelihood strategies.

The implicit assumption of the analysis presented by the World Heritage project is that the developmental problems faced by local people are solely economic in nature (which as Mehmet suggests (see Chapter Two) is associated with the transfer of the Western value system to the Third World), and specifically related to lack of money and employment from which to earn money. As a number of authors suggest, however, this analysis essentially reflects the priorities of outside development professionals, rather than 'poor' people themselves. A common suggestion is that poverty is not simply about lack of income or employment, and the relationship between these is made more complex by the inclusion of an environmental sustainability component into the equation[2]

The answer to poverty (which is not to say that people at East Rennell live in a state of poverty) thus becomes the provision of income generating schemes, which to a large extent marginalises the locally specific problems which people face.

The nature of development within the East Rennell World Heritage project thus contains remnants of a particular form of developmental thinking which centralises economics in the development process, and which was seen in Chapter Two to be one of the catalysts for the evolution and emergence of sustainability at the global level (particularly authors such as

[2]see, for example, Chambers (1995:6-13) for a critique of 'income-poverty' and employment thinking in development; Ahmed (1995:334) on the relationship between employment, development and the environment in relation to sustainable livelihoods; and Ghosh and Bharadwaj (1992:139-164) for an assessment of the relationship between poverty and employment in India; and Esteva (1992:7) for a critique of the 'homgenising influences of the dominant development paradgm.

Soja (1968) Redclift (1984,1987), and Adams (1990)). Much of the criticism concerning this particular developmental approach has focused on the fact that by centralising economic concerns, and thereby marginalising locally specific human and environmental concerns, the potential arises for increasing social, economic and environmental unsustainability, as manifested in increasing levels of poverty and inequality at local, national and global scales (Redclift,1984,1987).

These concerns were subsequently incorporated into global conceptualisations of sustainable development, as evidenced within the WCED and UNCED documents by a call for more locally based and culturally sensitive 'bottom-up' development. The focus within these conceptualisations was on initiating more participatory and empowering development such that local people maintained control of and benefited from development initiatives, The extent to which these concerns are transferred to the local level at East Rennell will thus prove indicative of the extent to which the East Rennell project represents a manifestation of global theory.

The East Rennell Project: Sustainable Development?
As was suggested in Chapter two, global conceptualisations of sustainable development have largely focused on the integration of environmental and developmental concerns at the local level, and the maximisation of economic and biological system goals to this end. More recently, however, there has been a realisation that social concerns also play an important role in determining the relative sustainability of a particular action. The suggestion is that sustainability necessarily involves such notions as equity, justice and inter-generational sustainability. The UNCED conference in particular, through the Rio Declaration (Thompson,1993:87-89) and Agenda 21 (Koch,1993:99-157; Sitarz,1994268), suggested that indigenous people had a major part to play in environmental management and development. In this respect

conceptualisations of sustainable development have taken on a tripartite form which suggests the maximisation of all three system goals or some balance between them (Barbier,1987; Kassas and Polunin,1989; Grundy,1993).

The nature of the East Rennell project is suggestive of some recognition being given to these social system goals, through the participation of local people and the implementation of local resource management strategies to ensure local level control of resources and the benefits of their exploitation. Although the developmental objectives of the project have thus far suggested an economic approach to development, there is an indication that social goals, such as the improvement of the status of women, the participation of youth and the development of links with social and community organisations in other parts of Solomon Islands, form an important component of the overall approach of the project (Wingham,1995:6; see also Scheyvens,1995 for an analysis of women's development initiatives in Solomon Islands).

At this stage in the implementation phase little progress has been made toward the attainment of these goals, which in itself is indicative of the biological and economic system goals taking precedence. Consequently, although perhaps representative of global conceptualisations of sustainable development, the East Rennell project initially focuses on the integration of environment and economic development within a frame work of locally based participation and resource management. The suggestion is that initial emphasis on biological and economic system goals will provide a basis from which to pursue futher social development goals.

As we shall see, however, the involvement of local people in the project does not necessarily mean an equal share in the benefits from it. In this respect, if the project is regarded as a local level manifestation of global sustainable development, the focus of this is on the maximisation of

biological system goals through conservation, and to a lesser extent economic system goals through the promotion of income generating employment, but to the detriment of the social system goal of equity and therefore social sustainability. In this respect the project at East Rennell represents a static system of trade-offs rather than the dynamic system suggested by Barbier as necessary for sustainability The project at East Rennell thus attempts to integrate environmental and developmental concerns by firstly focusing on the environment through conservation, and secondly building a development strategy around that conservation in such a way that the development is environmentally benign.

Given that social sustainability has been presented as an integral aspect of the sustainable livelihoods approach to environment and development, the suggestion from this analysis of sustainable development is that it differs fundamentally from that approach in how it attempts to provide for an improvement in the lives of people at the local level. As such it will be informative to assess the nature of the interface between the project and the reality of livelihoods at East Rennell, and particularly with respect to the 'new analysis' presented by the livelihoods approach.

SUSTAINABLE DEVELOPMENT AND LOCAL LIVELIHOODS

The nature of local livelihoods, as presented in Chapter Six, is indicative of an intimate relationship of dependence between local people and their immediate biological and social environments. The continued viability of this relationship largely determines the effectiveness and security of livelihood strategies by providing people with an adequate supply of livelihood resources and systems of reciprocity and exchange to which they may turn in times of need. Consequently, if either of these livelihood components breaks down, either by way of environmental change or decline, or social change, then the security and effectiveness of livelihood strategies will also decline.

It is possible to suggest therefore, that the implementation of a conservation and development strategy will have both negative and positive impacts on local livelihoods. The nature of global conservation, as outlined above, is initially suggestive of an alteration in the way in which humans interact with the environment, or ensuring that a 'sustainable resource use interaction' is maintained. Although the conservation goals of the project aim to include local people in the design, implementation and ongoing management of the World Heritage site, this participation is only to the extent that the livelihood strategies employed by local people remain traditional (and, it is suggested, therefore sustainable) in nature, or within guidelines prescribed by the philosophy of the World Heritage Convention. Consequently, conservation of the local environment through World Heritage listing effectively limits the range of options available to local people in gaining and enhancing their livelihood strategies, and as such places greater pressure on the success of the development component to provide alternatives.

This is not to say, of course, that local people, as they seek secure and sustainable livelihoods, will necessarily degrade the environment, nor that they are unaware of the relative merits of conservation of their environment as both a livelihood necessity and a potential income earner. As Chapter Six suggested, however, the total environment of East Rennell is viewed by local people as a source of livelihood resources. The availability of, and access to a wide range of resources is essential to traditional livelihoods, such that if one should become scarce for whatever reason then others may be used in its place. In this respect livelihoods at East Rennell exhibit a certain degree of flexibility in the use of resources to enable them to cope with stress and shocks, and thereby maintain some degree of security and sustainability. The codification of resource use, through the implementation of resource management plans, necessarily introduces a certain amount of rigidity into this system.

The suggestion is that the goals of the project as a whole will differ between outsiders and local people and, consequently, the success of the project will also be judged by these two groups according to different criteria. Outsiders will largely be concerned with the continued integrity of the environment as a World Heritage site and the extent to which this is an attraction to tourists from which local people can benefit financially. Local people, on the other hand will be largely concerned with the extent to which the project provides them with alternatives to traditional livelihood activities. In the event of the failure of the project to provide alternatives, local people will be less likely to view conservation as an important goal. This in many ways reflects the 'First-last' thesis present by Chambers (1983), who suggested that much of the problem associated with 'development' was that its conceptualisation and implementation largely reflects the biases of urban and Northern professionals.[3]

As was suggested in Chapter Six, a characteristic of local livelihoods is that they all exhibit some degree of dependence on outside opportunities and commodities. For many livelihoods in the area the extent of this dependence is minor, with the majority of livelihood goods being derived from the immediate environment. Others, however, show an increasing dependence upon employment opportunities, either locally (but provided for by outside institutions such as education and local government) or in other parts of the Solomon Islands. As both Chambers and Conway (1992) and Miyauchi (n.d.) suggest a local livelihood will consist of a diverse range of activities and strategies for the procurement of livelihood goods and services, and these will be derived from both internal and external sources, and indeed will be influenced by forces from within and outside the immediate local environment. The relative ability of people to exploit these opportunities is largely dependent upon the set of non-traditional capabilities they have for doing so. Within, and additional to, the set of traditional livelihood capabilities which all individuals have are a subset of capabilities which enable individuals and households to exploit

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[3] This idea will be covered in greater detail in chapter eight

opportunities presented from outside the set of traditional livelihoods opportunities. The relative impact of conservation between individuals will therefore be dependent upon the capabilities they have to exploit opportunities presented by the project, or alternatively, those presented from outside the area, and, subsequently, the development component of the project is likely to be of more benefit to those people or households who have these capabilities.

In this respect, although the project aims to assist local people developmentally by providing income earning opportunities, the ability of local people to benefit from this is not equal across the community. As such those people who cannot exploit ecotourism or small business opportunities must continue to derive livelihoods using traditional means. There is the potential within the project, therefore, for the generation of inequalities both in terms of financial benefits from the project and the impacts of conservation. As was suggested in Chapter Six, the commercial exploitation of local resources, such as the coconut crab and the ever present temptation of logging, is considered by local people as a viable livelihood strategy or opportunity. The inability for individuals and groups to benefit from the development component of the project is likely to increase pressure on these resources as local people attempt to gain cash income, and particularly given the possibility of inequality in incomes across the community as a result of the ecotourism/small business project. As Chambers and Conway (1992), and Redclift (1987) have suggested, local people do not willingly degrade their resource base in order to derive a livelihood. But they often over use particular resources because they are forced to through pressures over which they have no control.

In a similar way the project also, although perhaps unwittingly, sets up a system of competition within the local community: firstly, within the group of local people who are involved in the project, and secondly, between those who have the capabilities to become involved and those who do not.

An initial indication of the first of these was evident at East Rennell in the level of rivalry between the owners of the two guesthouses currently in operation at East Rennell over the few tourists who did come to the lake. With two more guesthouses under construction, and the possibility of another being added soon, there is potential for an increase in this conflict depending on the number of tourists that World Heritage listing attracts.

Another potential conflict at the site concerns jealousies within the community over the relative benefits of development accruing to individuals and households. This form of conflict is again evident at East Rennell with threats being made to guesthouse owners because of their perceived or actual financial gains from these. In this respect one guesthouse owner moved his entire family to live near the guesthouse because of threats to burn it down.

Allied to this conflict is the potential that development has for conflicts over land ownership and use. Although the land tenure system at East Rennell is structured along patrilineal lines, with males inheriting land rights from their father, the system is such that all people have access to land. Because applications for use rights between non-related people are seldom refused, an individual can potentially garden and collect resources anywhere around the lake area depending on their individual or household needs. This is an essential livelihood claim and access right, particularly given the nature of the soil on Rennell. Given the advent of development projects, however, and more specifically the increasing cash earning potential of land, it is possible that this system will also come under pressure for change. It was evident among local people that given the possibility of a particular piece of land acquiring commercial value, as a bird watching or guesthouse site for example, land ownership laws will be more rigidly enforced, with requests to use land possibly even being refused. In this respect conflicts will arise between those involved in development and the exploitation of land for commercial gain, and those involved in traditional subsistence activities, including gardening, fishing,

shooting birds and collecting forest resources. Although the suggestion from the surveys was that land ownership is only loosely defined, it was evident from conversations with local people that this system was slowly changing.

The suggestion here is that in attempting to implement a sustainable development strategy at East Rennell, the inherent inequalities within the design of the project, focusing as it does on the individual, and those inequalities already present within both traditional authority structures and people's sets of non-traditional capabilities, has the potential to actually increase the instability and unsustainability of social, economic and environmental systems. The initial focus on biological and economic system goals has the potential to destabilise the social system upon which traditional livelihoods depend. In this respect the neglect of social system goals such as equity and social justice, which form an essential part of the sustainable livelihoods approach, has the potential to destabilise the local livelihood system as a whole, to the detriment of those who rely on it for the majority of their livelihood goods and services.

The implication is that the analysis of local problems by the sustainable development approach described here is fundamentally flawed in its lack of balance between the three systems of sustainability. Given this conclusion, the question arises of how different would be the strategy suggested by a sustainable livelihoods approach to environment and development.

THE NEW ANALYSIS: LIVELIHOODS AND SUSTAINABLE DEVELOPMENT

As was suggested in Chapter Three (Food 2000,1987), the sustainable livelihoods approach to environment and development represents a new analysis of problems of environment and development at the local level. In this respect this approach focuses on the immediate reality of local people

to ensure that as an absolute minimum they have a basic means of living, and from which further strategies to limit population, manage resources and reverse destabilising processes such as rural-urban migration may be initiated. The question which this suggests is whether the aims of development inferred by this analysis necessarily differ fundamentally from those presented by sustainable development. The focus then becomes one of to what extent the livelihood strategies employed by local people are insecure and unsustainable, and what are their development needs as they perceive them.

The results of this 'new analysis', presented in Chapter Six, are indicative of the problems local people at East Rennell face in relation to their livelihoods. Key issues of concern which emerged during the course of this research were both environmental and economic in nature. The development priorities indicated by villagers suggest the areas in each of the villages, and to a certain extent the East Rennell area as a whole, which villagers believe need particular attention. These relate primarily to problems with traditional livelihood activities rather than indicating any latent desire for imported goods, and suggest that although local people do desire imported goods, their key concerns lie within the realm of village and local area livelihoods.

In this respect the analysis of livelihoods undertaken for this research indicated that two of the staple crops of local livelihoods were threatened by introduced pests and declining fish stocks in the lake meant that villagers' only source of protein was under threat and difficulties in providing sufficient shelter were continuing three years after the cyclone in early 1993. Given the nature of traditional livelihoods, which largely focus on the provision of food and shelter for families, the declining security of food supply represents a serious threat to these. Although it is difficult to isolate a single cause for the declining quality of the lake, both in environmental terms and as a food supply (although the two are likely to be directly related), the indication (as perceived by villagers) of declining

fish size and numbers places increasing pressure on existing fish stocks, other food sources and therefore livelihoods as a whole. The declining supply of taro in particular, and to a lesser extent potato perhaps represents the major threat to local livelihoods given the importance of these two crops in the food provision component of livelihoods at East Rennell.

One response to these threats is to increase the imported foods component in livelihoods, and therefore rely increasingly on imports such as rice, tinned fish and instant noodles[4]. In almost every case village livelihoods use these to supplement traditional goods, although again the ability to do so is not equal across the community. Given the possibility of imported goods becoming unavailable, as may occur with the cancellation of the island's shipping service, local people turn to wild foods such as roots and fruits available in the surrounding forest. The general consensus is, however, that when this occurs (and it did during this research) food supply becomes very short, and internal tensions within the villages are seen to rise.

The development priorities indicated by villagers to a certain extent reflect these problems. Tevaitahe villagers included roofing iron, timber for houses, water tanks, health clinic and two-way radio as their first five social development priorities. These reflect problems encountered by locals, including the regular occurrence of cyclones and the damage this causes to housing, and the problem of water supply, particularly for drinking, which tends to run short during dry periods of the year.

Tevaitahe villagers also indicated on their resource map that farming tools, pest control and vegetable seeds were priorities in the resource area. The indication is that local people are concerned about food supply,

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[4] It was also suggested by one villager that imported foods were preferred over traditional foods because of the ease of preparation involved in their use.

particularly associated with the problem of pests mentioned above, but also in relation to farming methods and the diversity of crops.

Niupani villagers also indicated problems associated with livelihoods, but tended to focus more on community issues such as the church, toilet, drinking water, laundry facilities, kitchens and playing fields. The women, however, did indicate that attention was needed to be given to the lake in terms of both food and water quality. The resource priorities suggested that local people are concerned with access and transport, village education and training and the development of resources for tourism.

The sum of these points is that the priorities of local people, as determined by an analysis of livelihoods, differ from those which the outside analysis of needs and priorities suggests. Although the provision of increased income earning opportunities may go some way to alleviating the problems faced by local people, it does this in an indirect way by simply providing individuals or households with the *opportunity* to earn money with which to approach other problems in the area. As such the analysis suggested by the project is simplistic and suggests that the answer to the problems people face are solved simply by stimulating the cash economy.

A livelihoods analysis, however, suggests that a community approach to development is required which focuses on securing the essential elements of traditional livelihoods before attempts can be made to implement mainstream development strategies. In many respects the problems faced by local people as they attempt to derive livelihoods are community level problems, that is they are faced by the community as a whole. This analysis also suggests that although these problems have an economic dimension, such as how to pay for seeds, pest control or roofing iron, which relate to household or individual level livelihoods, they more fundamentally have a social component in that they are perceived by local people to be village level rather than problems faced by particular

individuals. In this respect the social sustainability of livelihoods suggested by Chambers and Conway takes on new meaning. Not only do people need to be able to cope with the stress and shocks of declining food stocks and pests, but they also need to be able to work as a community to be able to deal with these problems effectively. Subsequently, a community approach to finding solutions to these problems would prove more effective than one which provides individuals and individual households with the opportunity to earn income as an alternative to traditional activities.

The suggestion from an analysis of livelihoods at East Rennell is that, although local people understand the potentials, and therefore desire the possibililty, of earning cash incomes, there is and continues to be a strong focus on the community and the problems it faces. The implication of this is that livelihood problems relating to traditional activities are community problems and as such require, and indeed demand, a community approach. The approach suggested by the sustainable development project takes a simplistic view of these problems, and therefore come up with simplistic answers.

All people at East Rennell rely on traditional livelihood activities for survival, with modern and imported activities supplementing these to varying degrees across the community. A livelihoods approach therefore suggests that the security and sustainability of livelihoods at East Rennell is to a large extent dependent on ensuring that traditional activities are secured first, such that all people benefit, and from this further development of the cash economy may take place.

In this respect the East Rennell World Heritage project, and specifically the development component of it, fails to recognise the nature of developmental problems[5] faced by local people. The solutions that it

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[5]The meaning of 'developmental problems' is implied here to be those problems which are faced by local people as they attempt to provide adequate livelihoods for themselves, and which outside development agencies aim to provide assistance in solving through the

offers and intends to initiate, although providing for the possible stimulation of the local cash economy, reflect this lack of recognition and as such appear to fall short of what a livelihoods approach suggests would be a more sustainable approach.

SUMMARY AND CONCLUSIONS

This Chapter has provided an assessment of the nature of the interface between the sustainable development project at East Rennell, and the reality of local livelihoods and problems which local people face in relation to these. It was suggested that in the context of this research three relationships existed: the connection between global theory and local practice, the local practice of sustainable development and its implications for livelihoods, and the implications which a 'new analysis' of livelihoods has for the practice of sustainable development.

At the local level global sustainable development theory attempts to set up structures of development and environment which correspond to the sentiments of a global vision of sustainability. In the East Rennell context this implies the implementation of a conservation strategy which aims to preserve the unique nature of the local environment as perceived by global environmentalism. Although the project as a whole attempts to ensure that local people benefit from this, or at the very least do not suffer materially and developmentally from conservation, the focus of the project on the economic and biological systems within sustainable development suggests that social unsustainability may result. This in turn may lead to further pressure on the sustainability of economic and biological systems.

Through the promotion of the area as an ecotourism destination, and the participation of local people in small businesses and resource management plans, the project attempts to integrate developmental and

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initiation of development projects, programmes and plans. In this sense a developmental problem may include the issue of pests which threaten the viability and security of local livelihoods and therefore provide a focus for action at the local level.

environmental concerns at the local level. This approach suggests, however, that the aims of sustainable development simply involve the conservation of the environment and the promotion of development objectives in an environmentally benign way. The implicit suggestion of the East Rennell project is that it is possible to take a 'blueprint' approach to sustainable development and apply in any local context.

In this respect, the answer to the problem of integrating development and environment at the local level is suggested by this project to mean the 'freezing' of the environment through the implementation of a conservation regime, and the alteration of human behaviour to ensure that this is 'sustainable'. By implementing strategies for an alternative approach to livelihoods, and specifically strategies which 'use' the environment but do not degrade it the project attempts to alter the nature of the human-nature relationship along the lines of a global environmental vision.

As the results of the 'new analysis' provided by the livelihoods approach suggests, the solutions to the problems of environment and development provided by the sustainable development approach do not bear a great deal of relevance to the locally specific problems confronted by local people as they attempt to contrive livelihoods. Although the provision of income generating opportunities appears to be part of the solution to the problem of ensuring secure and sustainable livelihoods, by providing people with a safety net of imported goods in the face of local scarcities, the economic approach to development indicated in the project neglects to recognise the differences between local people in their ability to exploit these. In this respect sustainable development continues to focus on development as an economic problem rather than a social one as well.

The sustainable livelihoods approach suggests that although environmental and economic factors are vital, the social system is equally important, and particularly given the aim of providing all people with sufficient means of survival. At present livelihoods at East Rennell are by

no means inadequate to the extent that people are living in poverty (although this is again an outsider's interpretation). The increasing insecurity of these livelihoods, as evidenced by the failure of tradional food provision and the increasing dependence on an insecure supply of imported food, suggests that a community level approach to development is required, and one which involves a degree of equity such that all people have access to the benefits of this.

In this respect global sustainable development thinking appears to concentrate on the need to provide local level solutions to global level problems, along the lines of a 'think global, act local' ideology, and specifically those relating to the need to integrate developmental and environmental concerns.

The effect of this at the local level is to implement structures which themselves may lead to unsustainability, which in turn suggests that environment and development have not been integrated at all. The suggestion is that although sustainable development at East Rennell aims to sustain the environment and develop people, it in fact sustains the environment but develops structures, and specifically economic structures through the stimulation of the local cash economy.

SECTION TWO: CONCLUSIONS
SUSTAINABLE DEVELOPMENT AND LIVELIHOODS:
CONVERGENCE OR CONFLICT?

Part Two of this thesis has provided an analysis of the local level and practical manifestations of sustainable development (Chapter Five) and the livelihoods of local people within the context of that project (Chapter Six). The suggestion from the analysis of sustainable development at East Rennell is that although the stimulation of the cash economy may go some way in providing for the needs of local people and conserving the environment, it fails to ensure this in two ways. First, the project fails to account for the competitive nature of the economy which it is initiating, and the inequalities of people in their ability to compete in this economy. Second, it fails to adequately address the uncompetitive nature of the economy which already exists at East Rennell, and which is necessary for the provision of traditional livelihoods in the area. In this respect the project at East Rennell may well prove unsustainable simply because it fails to account for the social sustainability of livelihoods, including the ability to cope with stress and shocks, the enhancement and adaptation of capabilities and overall livelihood security, as suggested by the livelihoods approach.

By implementing a globally inspired conservation strategy at East Rennell, and basing local development on what effectively amounts to exposure to the global tourism market, the sustainable development project which has been the focus of this research appears to give little regard to either the national development and environmental or local social contexts in which it is implemented. In this respect, and following Utting's analysis presented in the conclusion to part one of this thesis, the East Rennell project confronts neither the problem of *macro-coherency* nor *micro-coherency*.

As was briefly suggested in Chapter Four, Solomon Islands lacks either a coherent environmental or developmental policy framework at the national level. In this respect the local project lacks the support of a national tourism strategy which aims to promote Solomon Islands as a tourism destination, and thereby provide an essential base from which the World Heritage Site may be promoted. At the same time, the extraction of primary resources, and particularly timber, in Solomon Islands is currently at alarming rates. Consequently, although implementing a local conservation strategy, the wider conservation policy framework of Solomon Islands does not provide essential support at the national level for this initiative. As such, essential advice and on-going assistance for local people at East Rennell may not be forthcoming in the event of the cessation of international aid donor support. In this respect local people may be left to fend for themselves once the international 'spotlight' is removed, but in a livelihood context different from that in which they have fended for themselves before. In the event that the tourism industry does not provide the expected influx of cash into the local economy, the only recourse local people have are their traditional livelihoods, and in this instance conservation of the World Heritage site will assume less importance..

At a micro level, then, the project does not adequately take into account the rights, needs and priorities of local people in the context of environmental conservation and development. In particular it does not recognise the specific problems and difficulties local people face in their livelihood strategies, nor either the internal dynamics of these or the relationship of these to the surrounding environment. The suggestion is that the development project is largely a reflection of outsiders priorities rather than those of local people.

CHAPTER EIGHT

CONCLUSIONS:
REASSERTING THE LOCAL IN THE GLOBAL

INTRODUCTION

The aim of this thesis, as was outlined in Chapter One, was an analysis of local level livelihoods and how these relate to global conceptualisations of the integration of development and environment to achieve the goal of sustainability. The supposition was put that the approach to development and environment, suggested by sustainable livelihoods, was such that it required a reorientation of development priorities as they are formulated at the global level and, ultimately, implemented at the local level.

In Chapter Two it was contended that development can be defined as both a process and a goal: both a means to an end and an end in itself (Lee,1994; Scott,1995). The suggestion was that development involves a transformation by way of a varied set of processes to a more desirable state, and, after Goulet (1971), that these development processes comprise only one part of broader historical processes of change. Goulet suggests that two sets of such processes, in particular, act to impinge upon and define the course of human existence: those relating, on the one hand, to production, mastery over nature, rational organisation and technological efficiency, and on the other hand, to structures of power and ideology. The suggestion implicit in Goulet's argument was that the effectiveness of the initiation of the first set of 'developmental' processes was largely determined by influence over the second set of 'control' processes. The implication is that development has as much to do with a particular ideology as it has with an inherent desire to see an improvement in the lives of the poor. As such, the form that development takes will reflect the priorities of those who control the process rather than a recognition of the needs of those who were supposed to benefit from it.

The questions which remain to be answered in the context of this research, then, are first how sustainable development as implemented at East Rennell, and the reality of local livelihoods in that context, relate to broader change processes which operate at a global level and second, what are the implications of local livelihoods for the processes of development as they are formulated at the global level?

This chapter, by way of placing the local reality of sustainable development and livelihoods in a global context, seeks to answer these questions, and suggests that a livelihoods approach is in many ways incompatible with the way in which 'development' is theorized and formulated at the global, and predominantly political, level.

RE-PLACING SUSTAINABLE DEVELOPMENT

The preceding analysis of sustainable development, as presented in Chapter Five, and elaborated on in Chapter Seven, suggests that although sustainable development has been widely lauded at the global level as a means by which developmental and environmental goals may be integrated, the concept and its practical manifestations still fail adequately to account for the fundamental contradictions within the term. These, as Redclift (1987,1994) contends, include the inherent need for humans to both *conserve* environmental resources for future welfare and *use* environmental resources for present welfare. In addition to this basic contradiction is another associated with attempts to promote sustainability ideals in a global political economy which effectively works against these.

Although global structures of inequality have not been part of this analysis, it is suggested that these are in fact reflected in the nature of the project at the local level. The methods by which the project aims at achieving an improvement in the well-being of people at this level is indicative of an economic approach to development, which was suggested in Chapter Two

to be one of the root causes of the unsustainability of global development in the first place. By suggesting that development implies economic transformation and growth along the lines of a Western economic model, we necessarily infer that social, cultural and livelihood concerns lack importance in promoting well-being and sustainability at the local level.

In this sense, the Westernisation and industrialisation of the Third World, so criticised by authors such as Mehmet (1995), Soja (1968), Seabrook (1993) and Luxemberg (in Shiva,1989), may indeed be a factor in the unsustainability of development simply because of its focus on economic transformation and its neglect of the social and cultural context in which this takes place. The assumption from such 'global' consensus as Our Common Future (WCED,1987), the Rio Declaration and Agenda 21 (Thompson,1993; Koch and Grubb,1993; Sitarz,1994) is that although a more 'bottom-up' approach to development is required to ensure the achievement of sustainability goals, this necessarily entails participation in economic transformation to alleviate *poverty*, rather than participation in broader conceptualisations of development to promote *well-being*.

In attempting to integrate environment and development, then, global conceptualisations of sustainable development, and particularly those associated with bilateral and multilateral institutions, tend to focus on development and environment as separate entities rather than as interdependent parts of the same process. The approach to sustainable development, as suggested by the East Rennell project, is to implement a conservation regime with the aim of 'freezing' human interaction with, and impact upon, the environment, and then implement development initiatives designed to expand the economic sphere of human life.

In this respect, sustainable development fails to achieve an integration of environment and development because, firstly, it treats them separately and therefore disassociates the environment and resources from the social and economic spheres of local life, attempting to freeze their use,

and secondly, because by focusing on economic form of development it sets in place structures of inequality which work against this goal by ignoring the local level reality of livelihoods.

The global integration implicit in the project at East Rennell, both in terms of the insertion of the East Rennell environment into a global conservation regime, and the insertion of the local economy into the global economy through international tourism, works to decrease the control which local people have over both their environment and their livelihoods. Although the East Rennell project implies a non-exploitative and participatory relationship between local people, the environment and development initiatives, the project nonetheless shifts the basis of this relationship from a local to a global level, thereby changing the focus of local level human-environment relationships from social and livelihood centred to commercially centred.

In this respect sustainable development, regardless of attempts to promote local involvement and participation, fails to address the problem of where the locus of influence lies given the advent of global integration. Local people, at East Rennell for example, may maintain control over local businesses and the day-to-day management of their resources, but they are powerless to influence global processes, such as the vagaries of the global tourism market, into which they are being inserted. Sustainable development, although appearing to provide for environmental conservation and development may actually promote wider social, economic and, in the long term, environmental unsustainability. Development which focuses on this economic expansion and integration, and the promotion of economic goals more generally, fails to account for the possibility that economic development itself may be unsustainable given the possibility of a global economic downturn, which would result in the failure of this development to support the livelihood needs of local people. The result, in this event, would be a necessary return to traditional

livelihood strategies whether they are adequate, secure and sustainable or not.

By globalising both local environments and economies, sustainable development also fundamentally changes the relationships which exist at the local level, both between people and the environment, and between people themselves. Although the environmental principles inherent in sustainability thinking suggest a desire to incorporate elements of stewardship and cooperation into humans' dealings with nature (O'Riordan 1981, Passmore 1980, and Pepper 1984) the impostition of global environmental management ideals may actually work against this goal. The replacement of an intimate human-environment relationship with the less personal one implicit in global environmental management principles, effectively removes responsibility for environmental integrity from a personal to a more abstract level. The increasing reliance on the economic system for livelihoods, as opposed to biological and social systems, suggested by an economic approach to development also removes humans one step further from direct environmental and social responsibility, and the consequences of environmentally and socially unsustainable behaviour.

The suggestion from this argument is that although global sustainability has focused on incorporating indigenous and local people into development and conservation initiatives[1], the nature of the development process fundamentally changes the basis on which indigenous peoples' sustainable livelihoods and resource management systems, so valued by global sustainable development, are founded.

This is not to suggest that local and indigenous people should not participate in sustainable development, but rather that the goals of the development process itself, as conceptualised at the global level and

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[1] Agenda 21 in particular suggests that indigenous people have a store of traditional scientific and environmental knowledge, and have a fundamental human right to participate in sustainable development (Sitarz,1994:268-269).

operationalized at the local level, may not be compatible with the goals of indigenous and local resource management and livelihood systems. This suggests that if these systems are to be incorporated into global sustainable development, then a reorientation of the development process is required towards goals which are supportive of them.

With respect to Goulet's (1971) historical change processes, then, sustainable development continues to be concerned with production, mastery over nature, technological efficiency and rational organisation. Production, which under the dominant development paradigm may be seen as a synonym for the generation of economic wealth, is inherent in global conceptualizations of sustainable development, and particularly in their underlying assumption of the need to maintain economic growth to alleviate poverty. Mastery over nature is incorporated into sustainable development by the suggestion that sustainability will be realized through greater control, at a global level, of the management of the resource base to ensure continued production. In this sense the view of nature as plastic, which Moon (1994) suggests is central to technocentric environmentalism, is incorporated into a concept (sustainability) which is supposed to promote the opposite. Technological efficiency and rational organisation prove slightly more problematic with reference to the local manifestation of sustainability thinking presented in this thesis. It may be assumed, however, that the form which local ecotourism and small businesses take will be associated with that suggested by the Western model of capitalist enterprise. This suggests that the development component of sustainable development, in its attempt to provide employment opportunities for local people, will be in the form of competitive and individual, rather than cooperative and community, arrangements.

Because control of these development initiatives remains largely in the hands of local people, it may be suggested that Goulet's second set of processes, concerning structures of power and ideology, do not apply. As has already been suggested, however, the nature of these development

initiatives implies that these structures have already influenced the development process at a more fundamental level by suggesting that the form which development takes is the only possible form. In this respect, structures of power and ideology influence the way sustainable development is conceptualized at the global level by informing the development paradigm upon which these conceptualizations are based, and which in turn determines the means by which sustainable development is operationalised at the local level.

The analysis of the developmental and environmental problems which local people face is thus influenced by the biases associated with both the definition of development, and therefore the identification of developmental problems, and the subsequent identification of responses to deal with these. As Chambers (1983,1993) has suggested, these biases are themselves the result of beliefs implicit in the normal professionalism (paradigm) of development theory and practice, and which in turn result from the Western value system which centralises economic and scientific concerns.

The suggestion from this analysis of sustainable development is that, although it may be promoted as the means by which environmental and developmental principles may be integrated at the local level, this does not necessarily ensure that they are integrated at the global ideological level to provide a political and economic policy framework which supports the attainment of these goals. In many respects the fact that formulations of sustainable development are the result of global level problems, and solutions are therefore derived at that level, represents part of the problem with sustainable development, given their abstraction from local level reality. In this instance, an analysis of this reality will prove enlightening for global conceptualisations of sustainable development.

SUSTAINABLE LIVELIHOODS: REASSERTING THE LOCAL IN THE GLOBAL

The initial conclusion which can be drawn from this research is that sustainable livelihoods is a wholly local concept (although itself conceptualized at the global level), focusing as it does on the reality of local level livelihoods and the problems associated with integrating development and environment. The suggestion from this analysis is that if sustainable livelihoods are to be the goal of global sustainable development, and there is a strong argument that they should, (for example, the Food 2000 report (Food 2000,1987) and Chambers and Conway, 1992), then the methods and goals of sustainable development need to be reoriented to support this aim.

The key implication of a sustainable livelihoods approach is that focus needs to be moved from simply applying global conservation and development 'blueprints,' to a deeper analysis of the situation confronted by local people as they attempt to provide a living for themselves and their families. The results of the analysis of local level sustainable development suggested that the nature of this process precludes the involvement of all people in a local community, focusing as it does on the provision of employment opportunities to individuals. The relative ability of individuals across a community to participate in, and benefit from, this form of development is largely dependent upon their ability to do so. The unequal distribution of the necessary capabilities required to benefit from development is, however, largely neglected by mainstream development initiatives. In this sense just as countries face structural barriers to successful and profitable involvement in the global economy, so too do individuals in the local economy.

Traditional economic systems have circumvented inequality with the close association of the economic system to social, cultural and, to a certain extent, environmental systems. The effect of this association has been to ensure that every individual or household has claims and access to

sufficient resources, and are endowed with adequate capabilities with which to derive a livelihood. As was suggested in Chapter Three, livelihoods consist of a complex set of resources, claims and access and capabilities which people use to derive a living (see Figure 3.3) and which in many respects are situated within a broader arrangement of social, economic and cultural obligations which ensures their viability. The implementation of sustainable development, however, ignores the fact that conservation has the potential to upset this association, through restricting access to resources, and that not all individuals have sufficient capabilities to exploit opportunities presented by development. The set of capabilities an individual or household requires to exploit opportunities present from outside will not necessarily be present within the set of traditional capabilities which every individual acquires through the process of socialisation into his or her immediate social, cultural, economic and physical environments. In this respect, a livelihoods approach to development suggests that once sustainable and secure livelihoods have been achieved, the next step is ensuring that some form of egalitarian, and preferably community based, capability enhancement can occur.

In this respect, both the conservation and development components of global sustainable development ignore the realities of the local context in which they are implemented. The suggestion is that a blueprint approach to sustainable development is in fact unsustainable due to its neglect of locally specific social system goals, and specifically to those relating to the relative inequality between local people in their set of non-traditional livelihood capabilities.

As Chambers and Conway (1992) suggest much of the thinking about sustainability has focused on the ecological interpretation of this concept. Sustainability does, however, also concern the ability of local people to perform, and continue to perform, vital functionings[2] in the derivation of a

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[2] Functionings here is distinct from functions. In a livelihood context, functionings refers to the actual livelihood which an individual or household undertakes and the benefits (such as adequate nourishment and health) which they gain from these. (Sen, 1987).

secure livelihood. As we saw in Chapter Seven, sustainable development, as implemented at the local level, has tended to maximise the economic and ecological system goals of sustainability to the detriment of social goals. It was suggested that this is in part due to the nature of the goals of development and sustainability as defined at the global level. In many ways this formulation of sustainable development actually works against the sustainability of local livelihoods by neglecting social goals. This necessarily infers that there is a social component in the sustainability of livelihoods to ensure that they are able to cope with stress and shocks and to respond positively to changing local cicumstances.

Global formulations of sustainable development which hold sustainable livelihoods as a central goal must necessarily have the social goals of both inter- and intra-generational equity, and the equal, and therefore community-level, enhancement of livelihood capabilities. This notion appears to be in direct contradistinction to the implied sustainable development goal of providing local people with the *opportunity* to participate in income generating employment, but without the equity component of ensuring that they can and do participate.

The impacts of sustainable development can, therefore, be seen to be as potentially unsustainable as the form of development which preceded it. The livelihoods approach suggests that the answer to the problem of integrating development and environment lies not so much in the maintenance of essential environmental resources for development, but in the reorientation of development goals to permit the recognition of the local context in those goals. In this respect, the livelihoods approach implies that rather than overlaying an alternative livelihood system in the form of employment schemes, sustainable development needs to focus on finding locally specific solutions to problems which confront livelihoods and which decrease their sustainability.

This idea is indicative of one of Robert Chambers' reversals which he suggests are of central importance to ensuring that local people benefit from 'development' (1993:171). The suggestion Chambers makes is that development practice suffers from the biases associated with outsider professionalism, which includes the way in which information concerning development is collected, the methods used for analysis, the assumptions which result from that analysis, and the prescriptions formulated to initiate 'development'. The implication of a livelihoods approach is that a reversal of what is held as valuable in the development process is required, focusing more on the reality of local problems as local people see them.

Sustainable development, it can be argued, holds the 'development' of environmental and economic systems as of central importance, but from the perspective of 'global' economic and environmental sustainability which is subsequently transferred to the local level by way of projects and policies and plans. This focus reflects the biases and values of development professionals located largely in the industrialised Northern countries.

Livelihoods, conversely, suggest that what is in fact important is the nature of local level social, economic and environmental systems, the potentials and problems associated with these for the derivation of sustainable livelihoods, and the nature of the relationship between them which ensures that this is possible. Only by ensuring, firstly, that local people can secure adequate livelihoods, and secondly, that they can maintain and enhance these in changing local conditions, will the integration of environment and development be achieved. This approach necessarily entails removing the locus of development priority, from the Northern to the Southern countries, such that formulations of sustainable development reflect the priorities of those whom it is supposed to help.

The sustainable livelihoods approach suggests, therefore, that the importance of the local needs to be firmly planted within the economic,

intellectual and political processes of the global, such that these reflect the ultimate goal of development which is to improve the well-being of people at the local level. As such, the sustainable livelihoods approach presented here suggests nothing less than a reorientation of global development goals, away from economic, top-down and blueprint approaches, and towards more endogenous development which is initiiated and focused at the local level. T

CONCLUSION

This thesis has attempted to place the concept and theory of sustainable livelihoods within broader conceptualisations of sustainable development, to determine if and where these two meet to support each other and what the implications each has for the other. The new analysis of the relationship between environment and development suggested by a livelihoods approach was presented as a means by which the twin environmental and developmental goals of sustainable development may be integrated at the local level. The suggestion was that in order to support this goal, the way in which sustainable development is conceptualised at the global level needs to be altered in such a way that the global goals of environmental and developmental sustainability do not contradict the goals of sustainable livelihoods.

The suggestion implicit in this thesis is that although global sustainable development aims to promote improved welfare for the poor within a broader context of environmental sustainability, the way in which sustainable development itself is structured to a large extent precludes these goals. The fundamental problem with sustainable development is that it continues to suggest the transference of global level ideals to the local level, with little thought being given to the relevance of these ideals in the local context. In this respect sustainable development reflects the goals of a global political agenda rather than than the reality of local level contexts.

As an antidote to this, sustainable livelihoods imply a complete reversal of the development hierarchy, to suggest that local level realities should inform global action to alter the way in which global theory and policy generation is so structured that it effectively works against the provision of sustainable livelihoods at the local level. Although the way in which global level theory is formulated has not been an explicit concern of this thesis, there is a suggestion within the livelihoods approach that global level conceptualisations of change processes are in some way abstracted from the local level contexts in which they are applied. A sustainable livelihoods approach necessarily infers that local people are put first to ensure that they can indeed provide a livelihood for themselves, and from which broader action may take place to increase the sustainability of human action. The suggestion that poverty, the alleviation of which has been promoted as the key goal of development, leads to environmental degradation, and environmental degradation, by way of a dichotomous relationship, leads to poverty, provides both a moral and practical justification for making sustainable livelihoods a key goal at the local level. This in turn, however, will also prove fruitless unless global priorities are structured such that they support livelihoods at the local level.

The arguments forwarded in this thesis, have thus attempted to show that although the concept of sustainable development has been forwarded as the necessary means and over-riding goal of global change, there is an implicit suggestion within the concept that change only occurs at the local level. The sustainable livelihoods approach, by focusing on the local level inversely suggests that although change occurs at the local level, it is pointless if global policy does not support this. On this note, a final word would be that the livelihoods approach suggests that although we must think and act locally to support livelihoods, we must also begin to act globally to support livelihoods as well. This necessarily implies a

revisioning of global political priorities in the spheres of political, economic and environmental action.[3]

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[3] In a discussion with Prof. John Overton (the supervisor of this research) this particular idea, that we should think locally and act globally, came into the conversation as a way in which local level goals of sustainable development would be better realised.

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APPENDIX ONE

TEVAITAHE VILLAGE SURVEY RESULTS

SOCIAL MAP : MEN
TEVAITAHE VILLAGE
EAST RENNELL

24 November 1995

KEY

□ House or Building

△ Kitchen/cooking Building

△ Elderly Woman
▽ Elderly Man.
♀ Woman (16-yrs plus)
♂ Man (16-yrs plus)
○ Boy (less than 16yrs)
• Girl (less than 16yrs)

○ Development Priority
○ Priority Ranking.

Not Complete — Indicate that a Building require timber for framing, flooring or/and Walls, and/or roofing iron for completion

WARNING: Sketch map; not to scale.

SCHOOL
Not complete

SCHOOL
Not complete.

NOT COMPLETE
△ 12
▽ 8

NOT COMPLETE
○ 15
○ 8

K

NOT COMPLETE
○ 18
○ 10
○ 12

NOT COMPLETE
○ ⊕ 4
♂ ⊕ 2
○ 6mths

NOT COMPLETE
♂ 32.

K

NOT COMPLETE
♂ 51

K

NOT COMPLETE
♂ ⊕ 17 ⊕ 4
○ ⊕ 11
♀ ○ 8

K

NOT COMPLETE
△ ♂ ⊕ 8
♂ 22 ⊕ 4
○ ⊕ 10
♀

NOT COMPLETE
△
▽

K

NOT COMPLETE
○ 13 ⊕ 4
○ ⊕ 11 ⊕ 2
○ ⊕ 9
○ 6

K

NOT COMPLETE
♂ ○ 5
♀ ⊕ 8

NOT COMPLETE
♂ 56
○ 10

NOT COMPLETE
○ ⊕ 16
○ 7
○ 4

NOT COMPLETE
♂ ⊕ 10
♀ ⊕ 7

NOT COMPLETE
♂ 25
♂ 20

Spring

Spring

NOT COMPLETE
○

LAKE TE NGGANO

NOT COMPLETE
♂ ⊕ 10 6mths
○ 9
○ 3

church

Spring

NOT COMPLETE
♂
♀

STORE HOUSE

Spring

NOT COMPLETE
⊕ 20
⊕ 12

NOT COMPLETE
♂ 67

NOT COMPLETE
♂
○ ○

CYCLONE SHELTER	10
GENERATOR FOR LIGHT + CONS	9
ROOFING IRON	1
TIMBER FOR HOUSES	2
PEOPLE TEMP TOILET	6
TWO WAY RADIO	5
CLINIC	4
WATER TANK	3
GAS STOVES	8
GUEST HOUSE	7

K

NOT COMPLETE
○ ⊕ 16
○ 7
○ 4

NOT COMPLETE
○ 14
○ ⊕ 10
○ 8
⊕ 4

K

NOT COMPLETE
♂ 32

NOT COMPLETE
△ ♂
○ 16

K

NOT COMPLETE
▽

LAKE TE NGGANO

NOT COMPLETE
♂ 32

NOT COMPLETE
○ 11

NOT COMPLETE
♂ 43

NOT COMPLETE
♂ 17
○ 15

SPRING

SOCIAL MAP: WOMEN
TEVAITAHE VILLAGE
EAST RENNELL
24 NOVEMBER 1995

KEY

△	ELDERLY WOMAN
▽	ELDERLY MAN
○	WOMAN
□	MAN
○	GIRL (>4yrs)
⊕	BOY (>10yrs)
LTS	LONG TERM SICKNESS
HC	HANDICAPPED
PP	PIGS
CH	CHICKENS
CS	CHAINSAW
COOKING: FIRE	OPEN FIRE
KERO	KEROSINE STOVE
GAS	GAS STOVE
OBM	OUTBOARD MOTOR
CANOE: OTR	DUGOUT CANOE
FIBER	FIBERGLASS CANOE
HNC	INDICATES HOUSE IN NEED OF ROOFING, FLOORING AND/OR WALLS FOR COMPLETION

HNC
△ CS
▽ PP9
○14 ○8 CH40
⊕R ⊕3 FIRE
⊕10 ○2 OTR

FIRE
△ OTR
▽

⊕ OTR
○○

WATER

WATER

□ CH=20
   OTR
   FIRE

K

K

FIRE
△ OTR
▽ CH 10
○6

K

WATER

HNC
△ ⊕12 FIRE
   ⊕10 PP=2
▽ ⊕9
⊕ ⊕ ⊕

FIBER
△ OBM
○14 CH 20
⊕4 GAS
○ FIRE

K

WATER

WATER

K

HNC
△ PP=1
▽ CH=8
⊕10 FIRE
○3 OTR
○7

HNC
△ FIRE
▽
⊕11
⊕4
○7 ○3

K

FIRE
△ PP=2
▽ CH=20
⊕ OTR
⊕11 ○9
⊕10 ○12

K

WATER CHURCH

FIRE
△ LTS CH?
▽ OTR
○
⊕ ○6

HNC
□ CH
□ OTR
○ FIRE

WATER
▽ CH5
   OTR
○11 FIRE

HNC
○ LTS FIRE

K

HNC
△ PP3
▽ CH?
○ OTR
⊕9
⊕5 ○11

K

K

K

K

HC FIRE
▽ CH=10
○ OTR

△ FIRE
○ CH=3
⊕ OTR

□ FIRE

□ FIRE

○ FIRE

□ FIRE

□ FIRE

K

□□ FIRE

○⊕ FIRE

HNC
△ LTS CH=10
▽ OTR
○ FIRE
⊕9

RESOURCE MAP: MEN
TEUAITAHE VILLAGE
EAST RENNELL

27 NOVEMBER 1995

Legend

- ○ PRIORITY RANKING.
- ● DEVELOPMENT PRIORITY
- ○ UNINHABITED VILLAGE
- ● INHABITED VILLAGE
- FISHING AREA
- COCONUTS
- TARO SWAMP
- GARDEN AREA
- BUSH/FOREST
- BUSH TRACK
- ROAD
- WARD BOUNDARY

LAKE TE NGANO

TEATUONO

PAS1840

NIUPANI

TEMUMU

TEUNA

TEGUGU

RESOURCE MAP: WOMEN
TEVAITAHE VILLAGE
EAST RENNELL

27 NOVEMBER 1995

KEY

- TARO SWAMP
- PANDANUS
- GARDEN AREA
- VILLAGE
- LAKE
- ROAD
- BUSH TRACK.
- BOUNDARY

WARNING: SKETCH MAP ONLY
NOT TO SCALE

← TO SEA

TEVAITAHE

TEBAIEHA

Pan Pan (Maupi) Garden.

Cross for medicine. Antiseptic and painkiller etc. Fruit used for string, sewing umbrellas etc.

tree for timber + Small black fruit + edible fruit about 2cm

Pandanus for mats, fruit eaten for Coconut

'Uie' (Calamus Sp.): Cane for making Very strong rope for timber and for making baskets. Crab but used for baiting tying etc

Bush.

Abundant Vine is an Indicator to begin pawn harvest.

Ngali Nut - timber for canoe. oil for Sauce etc. Nut eaten

tree - timber used for canoe.

Tree - timber used for making bowl to produce pudding. For making Kuabara fire lighter (Friction)

tree with leaf used as Kuabara when fruit is mature. known when may be found inside eaten.

tree used for canoe - coconut crab also eats fruit

Wild cherry tree - fruit eaten.

Cabbage tree - leaves eaten as 'cabbage'

tree for use as a spade/digging implement

tree provides medicine for stabilities

Broadleaf plant - nut eaten, leaf for parcel. Customary Boundary Marker

Fallow gardens.

Wild Yam (Bia)

Pandanus for umbrella.

Fallow garden

Tree with real flower (Hibiscus) used for medicine when coughing blood

Coconut Palm

Coconut

Garden areas ready for planting. Cleared and burnt.

Coconut

Fallow garden

Bush (long term regrowth)

Crosses

Crosses

Old School

Cross

Bananas and Pan Pan.

Playing field (Netball court)

Bananas and Breadfruit

Nie (?) Palm. Fruit edible

Apple tree (Wild apple).

Teuritahe Village.

LAKE TENGANO

LAKE PROVIDES VILLAGE WITH FISH (TILAPIA). LAUNDRY AREA. TRANSPORT (dugout canoe or outboard fiberglass)

25 - 30 m

	Section 1	Section 2	Section 3
Soil / Water	Almost Nil, except in small pockets. Mostly Coral limestone rock with Covering of Humus and rotting vegetation. Nil Surface Water.	Small pockets between coral rock outcrops. larger areas in depressions	Almost complete covering of yellow/brown soil. Very shallow except in pockets in depressions. Coral rock just below the surface.
Water		Nil surface water. Some ground water in natural wells in coral rock approx 1-2m below surface	Nil surface water. Wells in natural holes. Springs at lake edge
Vegetation	Many trees of good size, but mostly smaller trees, or tall with narrow girth. Dense undergrowth except in areas that have been cleared.	Fallow garden areas interspersed with scrubs and trees, coconut palms, pockets of thick bush.	Coconut, Banana, Pan Pan, large grass areas around village
Crops	Nil except for some areas where Paw Paw have sprung up. Immense number of Wild Foods and resources used by locals. Nil cash crops. Population. Nil Cash Crops.	Wild foods collected by locals (yam + fruits) Coconuts, Aana, Potato Paw Paw. Nil cash crops.	Coconut, Banana, Pan Pan, Some transplanted wild foods.
Socio-Economic Indicators	Nil	Nil except closeness of gardens to village May indicate some sort of hierarchy of ownership	Differing state of Housing ie some leaf houses. Some incomplete permanent housing. In-village employment is Nil except for school teacher

TEUAITAHE VILLAGE : WOMEN'S TRANSECT
28/11/95
DIRECTION: WEST → EAST
DISTANCE: APPROX. 600m

Labels (west to east): BIBLE SCHOOL · COCONUT PALM · BANANA · PAW PAW · BUSH WITH FIVE LINE FOR DRINK, UMBRELLA ETC · TREE WITH BARK FOR TAPA · PANDANUS · BUSH · WILD CABBAGE · CUSTOM MEDICINE FOR DIARRHOEA · WILD FRUIT SIMILAR TO GRAPE FOR FOOD + DRINK · PAW PAW GARDEN · FOOD + MEDICINE FOR DIABETES · 'METE' - FRUIT ON VINE TASTES LIKE PINEAPPLE · BUSH · WILD CHERRY TREE · SLIPPERY CABBAGE · WATERMELON · COCONUT · TARO GARDEN · COCONUT · FRESH WATER SPRING · TREES FOR GRASS SKIRT · HOUSES · COCONUT · TREE FOR CUSTOM DYE (BLACK) · BANANA · LEMON TREE · BREADFRUIT · HOUSES - SMALL PALM WITH EDIBLE FRUIT · FREE STANDING TREES · HOUSES - BEGINNING OF VILLAGE · TREE WITH NICE SMELLING FLOWERS USED AS FRAGRANCE AND OIL · FRESH WATER - SPRING - FOR WASHING, LAUNDRY ETC · VINE WITH EDIBLE FRUIT · BANANA · HOUSES - VILLAGE PROPER · TREE WITH FLOWER USED FOR BABY OIL, PERFUME ETC · CHURCH

15-20m

LAKE TE'NGGANO

Section 1

SOIL: Mostly coral rock with very small pockets of light yellow brown soil in holes and depressions

VEGETATION: Mostly dense bush but with areas of planted coconut, paw paw, banana etc. Large number of edible and usable plants/trees.

WATER: Nil surface water

CROPS: Coconut, banana, paw paw, garden areas with pana, potato, pineapple (not shown). Nil cash crops

SOCIO-ECONOMIC: Store at Bible school stocks rice, tinned fish, corned beef etc. (not used much by villagers). Otherwise nil

Section 2

SOIL: Mostly light soil covering with coral rock outcrops. Areas of swampy dark brown soil in depressions used for taro.

WATER: Springs occur in low areas - water clear cool and fresh.

VEGETATION: Areas of bush interspersed with coconuts, paw paw, taro and other crops.

CROPS: Coconut, watermelon, taro, pana, potato, pineapple. Cash crops - nil

SOCIO-ECONOMIC: Nil

Section 3

SOIL: Good covering in most places, but still with coral outcrops. Soil is still not very deep in most places. Swampy areas around lake have dark brown peat soil

WATER: No surface water except where springs come to the surface. Springs tend to be at lake edge and flow into the lake at low tide

VEGETATION: Large grass areas in village and a number of different types of trees spread throughout. Trees tend to be decorative (eg 'xmas' tree) or have some use-value (eg either for food or for housing/weaving etc).

CROPS: No crops as such in the village but a number of fruit-bearing trees - eg banana, coconut.

SOCIO-ECONOMIC: No paid employment in the village except for the school teacher. One fiberglass canoe and outboard for hire and a number of chainsaws. These obtained either through grants or from outside employment. Houses show differing stages of completion.

LAKE PROVIDES FISH (TILAPIA), TRANSPORT AND WATER (SLIGHTLY SALINE).

SEASONAL CALENDAR: TEUA ITAHE VILLAGE EAST RENNELL
29 NOVEMBER 1995

MONTHS OF THE YEAR (EUROPEAN - RENNELL EQUIV.)	WIND (MATANGI)	RAIN	STARS	PANA YAM	TARO	POTATO	BANANA	WATERMELON ROCKMELON	LABOUR (LOW / HIGH)	PESTS	FOOD CONSUMPTION
JANUARY - PEGA TAHA AKI	WEST WIND CYCLONE SEASON	CYCLONE SEASON BUT AVERAGE RAINFALL		HARVEST	HARVEST ALL YEAR TAKES 7-10 MONTHS TO GROW, DEPENDING ON VARIETY / PLANT BUT NOT THE BEST TIME						
FEBRUARY - LAGIGHI MATAKITAKI											
MARCH - LAGIGHI GOTO											
APRIL - LAGIGHI HAKAOTI						MAIN PLANTING PERIOD : APRIL TO AUGUST					
MAY - TEGINIA	WIND GENERALLY FROM EAST	PERIOD OF HEAVY RAIN	STAR RISE (HETU'INTA'AKI)	HARVEST MAY = YAM ONLY	STAR RISE : PLANT DEEP IN SOIL BECAUSE TUBER GROWS UPWARDS	HARVEST PERIOD (CROP TAKES 3 MONTHS TO GROW)				YEAR ROUND PROBLEM - RATS EVERYTHING - CLOTHES, PAPER, LEAVES / AFTER CYCLONE NINA IN 1993 BULL ARRIVED AND IS A PROBLEM ALL YEAR / SWAMP HEN PROBLEM ALL YEAR	FOOD SUPPLY GOOD
JUNE - TEONO				PANA AND YAM							
JULY - TEHITU											
AUGUST - TEBAGU		DRY PERIOD NO RAIN		BEST TIME FOR PLANTING (GHAPU)							
SEPTEMBER - TEIBA			STARS GO DOWN (HETU'UGOGOMI)		STAR FALL : PLANT SHALLOW IN SOIL BECAUSE TUBER GROWS DOWNWARDS	PLANTING : NOT GOOD TIME BUT OK	PLANTING				AUGUST TO APRIL FOOD SUPPLY SHORT NO YAM, PANA POTATO
OCTOBER - ANGA HUGU											
NOVEMBER - PEGA MATAKITAKI							NOVEMBER TO FEBRUARY MAIN FRUITING PERIOD				
DECEMBER - PEGA GOTO	WIND GENERALLY FROM WEST BEGINNING OF CYCLONE			PLANTING TIME BUT NOT A GOOD ONE USUALLY				HARVEST IN DECEMBER			

* WHEN PARTICULAR TYPES OF TREE FLOWER, IT INDICATES THAT PARTICULAR TYPES OF SEA FISH ARE GOOD FOR OIL

* UBO GEGEU - 'UBO' = TREE TYPE
  - 'GEGEU' = RIPE   } INDICATES TIME WHEN IF CATCH FISH THEN YOU MUST EAT THEM STRAIGHT AWAY
  - WHEN FRUIT RIPE ON A PARTICULAR TREE

VILLAGE GARDEN
TEUAITAHE VILLAGE
EAST RENNELL
1 DECEMBER 1995

GARDEN SUPPLIES 2 ADULTS AND 6 CHILDREN.

△ PINEAPPLE
O BANANA
* PAW PAW

≈30m

ROAD TEUAITAHE 1 Km →

BUSH

BUSH

GARDEN AREA PLANTED WITH POTATO AND YAM (PANA)

≈10m

BUSH

BUSH

BANANA

BANANA

GARDEN AREA
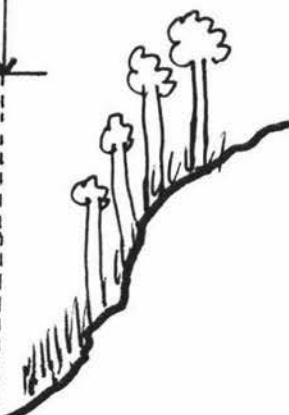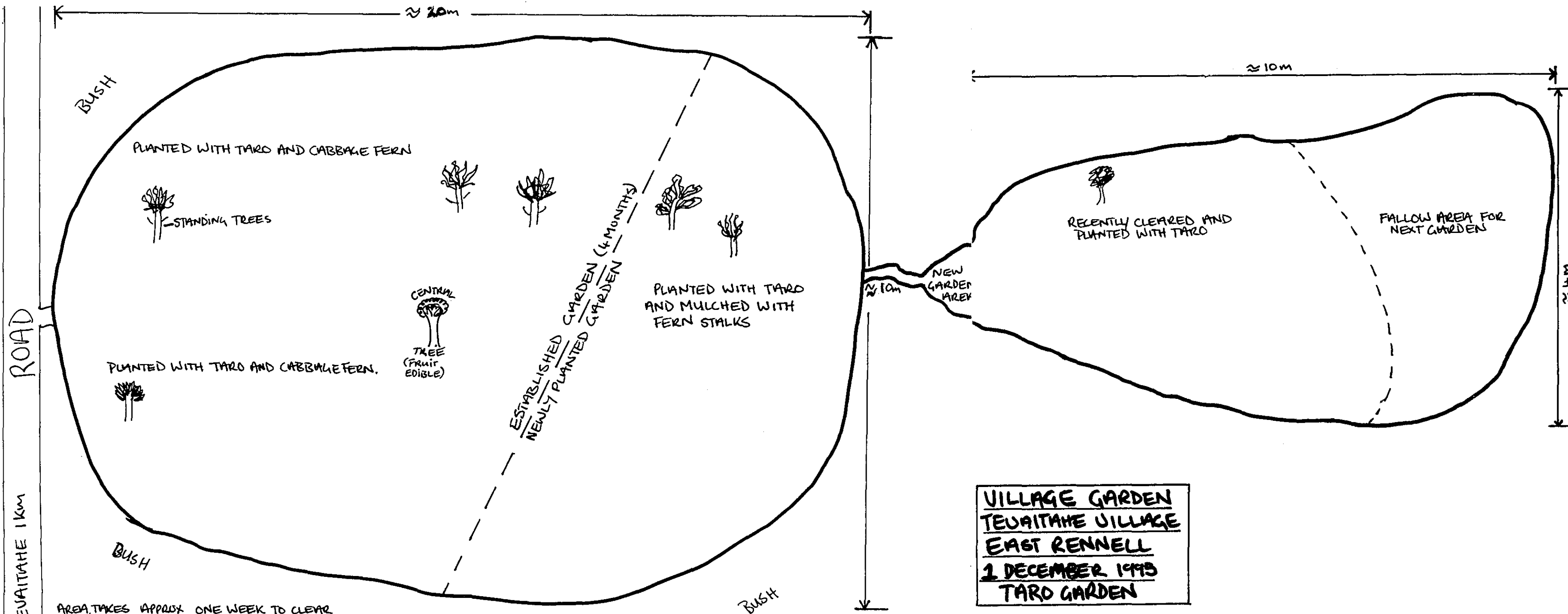
≈ 20m

≈ 10m

BUSH

ROAD

PLANTED WITH TARO AND CABBAGE FERN

STANDING TREES

CENTRAL
TREE
(Fruit
EDIBLE)

PLANTED WITH TARO AND CABBAGE FERN.

ESTABLISHED GARDEN (4 MONTHS)
NEWLY PLANTED GARDEN

PLANTED WITH TARO
AND MULCHED WITH
FERN STALKS

≈ 10m

NEW
GARDEN
AREA

RECENTLY CLEARED AND
PLANTED WITH TARO

FALLOW AREA FOR
NEXT GARDEN

≈ 4m

BUSH

BUSH

← TEUAITAHE 1Km

AREA TAKES APPROX ONE WEEK TO CLEAR
PLANTING IS SPLIT TO SPREAD HARVEST
AREA PROVIDES FOOD FOR TWO MONTHS PLUS.
MEDIUM SIZE GARDEN.
PROVIDES FOR TWO ADULTS AND SIX CHILDREN PLUS OTHERS. AS NEEDED
LOCATED WITHIN LARGE AREA OF FLAT PEAT SWAMP

VILLAGE GARDEN
TEUAITAHE VILLAGE
EAST RENNELL
1 DECEMBER 1995
TARO GARDEN

APPENDIX TWO
NIUPANI VILLAGE SURVEY RESULTS

SOCIAL MAP: MEN
NIUPANI VILLAGE
EAST RENNELL

4 DECEMBER 1995

KEY

HNC	HOUSE/BUILDING NOT COMPLETED
CH	CHICKENS (EVERYONE IS SAID TO OWN CHICKENS)
CB	CHAINSAW
COOKING - FIRE	OPEN FIRE
KERO	KEROSINE STOVE
GAS	GAS STOVE
OBM	OUTBOARD MOTOR
OTR	CUSTOM DUGOUT OR OUTRIGGER CANOE
FIBER	FIBERGLASS CANOE
(WATER)	WATER TANK
K	KITCHEN
🔴	DEVELOPMENT PRIORITY
🟢	PRIORITY RANKING

※ WARNING: SKETCH MAP ONLY   NOT TO SCALE

PLAYING FIELD

PLAYING FIELD

SCHOOL

SCHOOL

CHURCH

ISLAND OF REMDY

LAKE TENGGANO

LAKE TE NGGANO
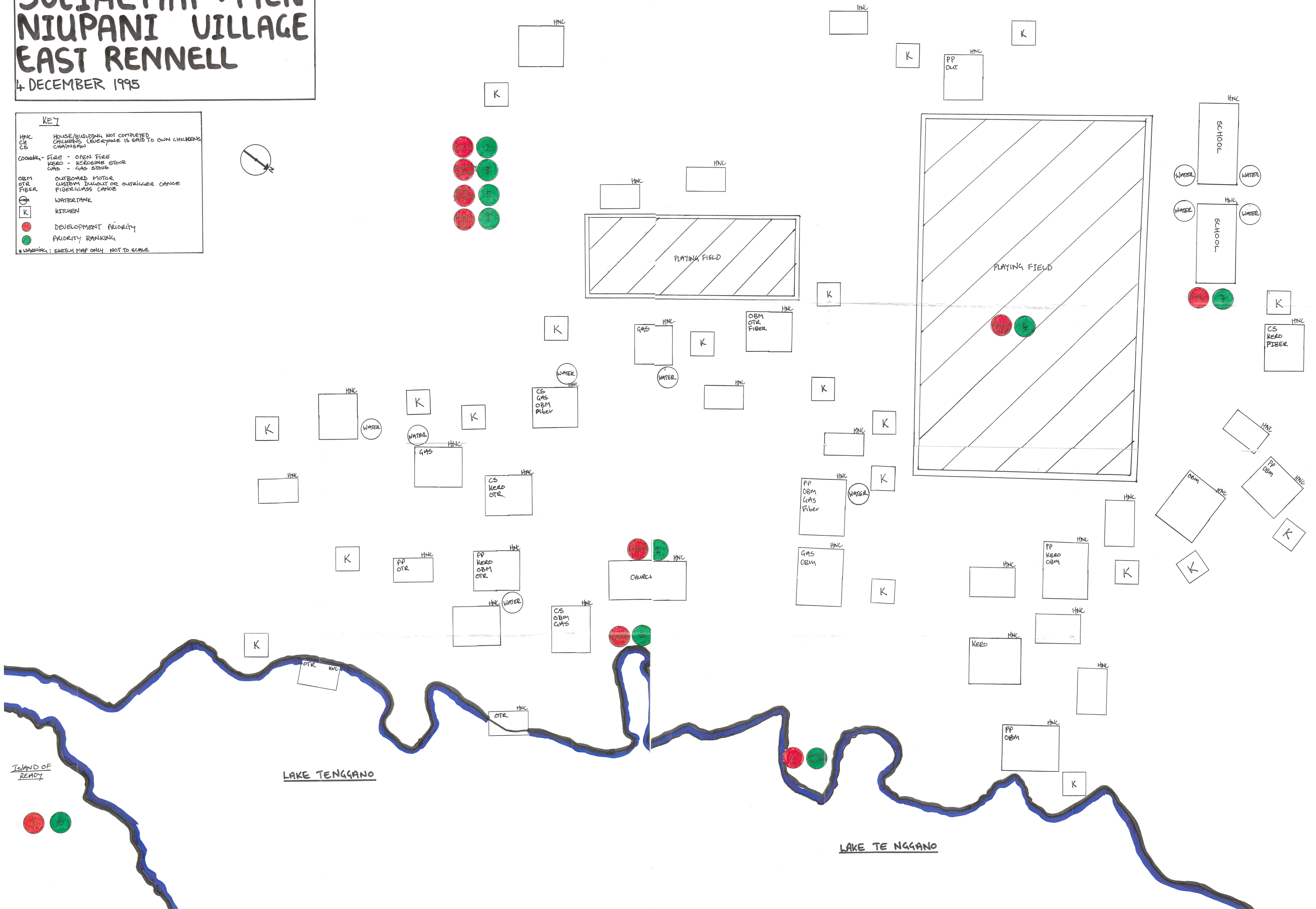
SOCIAL MAP: WOMEN
NIUPANI VILLAGE
EAST RENNELL
4 DECEMBER 1995

KEY

Symbol	Meaning
△	ELDERLY WOMAN
▽	ELDERLY MAN
♂	MAN
♀	WOMAN
⊕	GIRL (> 16yrs)
○	BOY (> 16yrs)
EH	EMPTY HOUSE
HNC	HOUSE NOT COMPLETE
HP	HANDICAPPED PERSON
PP	PIGS
CH	CHICKENS
CS	CHAINSAW

COOKING
GAS	GAS STOVE
KERO	KEROSINE STOVE
FIRE	OPEN FIRE

OBM	OUTBOARD MOTOR
FIBER	FIBREGLASS CANOE
OTR	DUGOUT CANOE

K KITCHEN

🔴 AREA NEEDING DEVELOPMENT

🟢 PRIORITY RANKING

WARNING: SKETCH MAP ONLY
NOT TO SCALE

GIRL'S PLAYING FIELD

PLAYING FIELD

SCHOOL

SCHOOL

SCHOOL CHAIRMAN

CHURCH
community
chairman

LAKE TENGGANO

ISLAND

FRESH WATER SPRING

KEY

- ISLAND WITH COCONUT
- COCONUT AREA
- GARDEN AREA
- FISHING AREA
- TRACK TO SEA
- ROAD
- TIMBER CUTTING AREA
- VILLAGE OR PLACE TO STOP
- EELFISH AREA
- DEVELOPMENT PRIORITY AREA
- PRIORITY RANKING

MATASO
MANUBAGU
UAGU
TUGHUALI
ASGILKAGIA

TENGILUNGA
TEUGU MAKO

AUGARUAGA
HAGAGINAGA
NIUPANI
ANANGA
MANGE

KIAKOE

GIAGAIVILU
SANOE
NGATOGE

TEVAIKEHA
SAMAKEKE
TEVAITANE
NIUPANI
TEVAIKEHA

LEKANIBAGHI

GARDEN

FISHING

EELFISH
HARVEST

KASUSU (COCONUT CRAB)
TAKEN FROM WHOLE LAKE AREA.

RESOURCE MAP: WOMEN
NIUPANI VILLAGE
EAST RENNELL
5 DECEMBER 1995

SEA (fishing)

TARO

Coconut CRAB

Coconut CRAB

TARO

TARO

TARO

Potato

TARO

PANDANUS

TARO

Potato

EEL FISH

KASUSU

PANDANUS

COCONUT

Potato

COCONUT

KASUSU (COCONUT CRAB)

TOMATO

GARDEN TARO

GARDEN TARO

SEA

PAWPAW

TILAPIA

SEA

PAWPAW

POTATO

FISH

CLAMSHELL

PANDANUS

PANA AND YAM

NIUPANI VILLAGE: MEN'S TRANSECT
13/12/95
DIRECTION: SOUTH ⟹ NORTH
DISTANCE: APPROX. 800M

Labels (left to right):
- BUSH
- NON-MOSQUITO AREA
- WOOD FOR HOUSING (FRAMING)
- 'DRUMS' TREE (Morinda citrifolia) EDIBLE FRUIT
- SMALL POTATO GARDEN WITH PAW PAW + SLIPPERY CABBAGE
- BUSH - TIMBER FOR HOUSING
- PANDANUS FOR BEDS (MATS)
- BUSH
- COCONUT AREA
- 'KANIPATA' TREE (Macaranga tanarius) WOOD FOR LEAF HOUSES
- BAMBOO FOR BUILDING
- USED FOR ATTRACTING FISH (Premna corymbosa scum)
- 'MIRILIKI' TREE FOR HOUSES (Rauvenia?)
- COCONUTS
- FALLOW GARDEN (2-3 YEARS FALLOW)
- FALLOW GARDEN AND COCONUTS
- TREE WITH FRUIT (BEBE?) - SOUR BUT EATEN LIKE MANGO
- TREE, (ALE-BIT LIKE PANDANUS FOR BED, WALLS ETC.)
- BIG TREE. FRUIT LIKE APPLE (APPLING)
- COCONUT
- CAVE BESIDE TRACK - CYCLONE SHELTER
- COCONUT
- 'HAIPAI' PALM (Cyas circinalis L) EDIBLE FRUIT TAKES 6-7 DAYS TO PREPARE.
- COCONUT IN CLEARED GARDEN (CLEARED + BURNT)
- TREE ('CANO') FRUIT FOR FOOD AND WINE
- COCONUT
- INTRODUCED TREE SPECIES (KALUMI?)
- HOUSE
- CHRISTMAS TREE
- FALLOW GARDEN
- 'FARAE' TREE - NUT EATEN (Terminalia catappa)
- 'ESE' (?) TREE - FRUIT EATEN
- PLAYING AREA (NETBALL)
- BANANA
- VILLAGE
- WATER TANK
- CHURCH
- VILLAGE
- FIBREGLASS CANOE WITH BOARD MOTOR.
- LAKE TE NGGANO

SOIL — SMALL POCKETS OF YELLOW/BROWN POWDERY SOIL MOSTLY IN DEPRESSIONS. OTHERWISE VIRTUALLY NIL CORAL ROCK WITH VEGETATION GROWTH ON TOP.
WATER — SURFACE WATER NIL
VEGETATION — DENSE BUSH WITH SMALL AREAS CLEARED FOR GARDENS.
CROPS — SMALL AREAS OF POTATO, PANA, PAW PAW. CASH CROPS NIL
SOCIO-ECONOMIC — NIL

SOIL — LARGER AREAS OF SOIL IN DEPRESSIONS - AND BETWEEN ROCKS ON GROUND SURFACE.
WATER — SURFACE WATER NIL. SOME NATURAL HOLES FORMING SPRINGS
VEGETATION — POCKETS OF DENSE BUSH BUT MOSTLY CLEARED FOR GARDENS. COCONUT. MANY TALLER TREES LEFT STANDING
CROPS — PANA, POTATO, COCONUT
SOCIO-ECONOMIC — NIL

SOIL — GROUND MOSTLY COVERED WITH SOIL BUT STILL SMALL AREAS OF PROTRUDING ROCK
WATER — FRESH SPRINGS AT LAKE EDGE
VEGETATION — MOSTLY GRASS COVER WITH OCCASIONAL COCONUT PALM, BANANA, PAW PAW AND DECORATIVE AND/OR SHADE TREE
CROPS — PANA, BANANA, COCONUT, TARO IN LAKE EDGE SWAMPS.
SOCIO-ECONOMIC — PAID EMPLOYMENT ALMOST NIL (TWO TEACHERS) SOME HOUSES HAVE IRON ROOFS AND SOME HAVE LEAF ROOFS. SOME HOUSES ARE PERMANENT TIMBER WHILE OTHERS ARE LEAF HOUSES.

LAKE PROVIDES FISH (TILAPIA) TRANSPORT AND WASHING/LAUNDRY.

NIUPANI VILLAGE: WOMEN'S TRANSECT
14/12/95
DIRECTION: WEST ⇒ EAST
DISTANCE: 600m.

Diagram labels (west to east):

BUSH · PANA PAW GARDEN · CANES · FALLOW GARDEN · WILD FOODS - SLIPPERY CABBAGE, WILD YAM · COCONUT · TREE WITH LEAF FOR WRAPPING FOOD · COCONUT · TREE WITH LEAF FOR PARCELS · WILD PANDANUS FOR MATS ETC (BROADLEAF) · BUSH AREA · COCONUT · CLEARED GARDEN · COCONUT · PANDANUS (WILD) · PANDANUS PLANTED BY LOCALS (BROADLEAF) ALSO EAT FRUIT · COCONUT · CLEARED GARDEN · PANDANUS FOR BASKETS (PLANTED) · GARDEN - PANA, POTATO. · COCONUT · PAW PAW · LIME WITH SMALL FRUIT - TASTE LIKE PINEAPPLE · CLEARED GARDEN - CLEARED + BURNT · WILD SWAMP CABBAGE (KANGKE OR WHKE) INTRODUCED · BOGDROPS - FIVE PLANTING TREE · COCONUT · PANDANUS · FALLOW GARDEN · BANANA (PLANTATION) · VILLAGE · PLAYING FIELD · POTATO GARDEN · SCHOOL · HOUSES · CHURCH

Section 1

SOIL/WATER: LIGHT COVERING, DEEPER POCKETS IN DEPRESSIONS MOSTLY CORAL ROCK OUTCROPS. NIL SURFACE WATER.

VEGETATION: DENSE BUSH BECOMING LIGHTER WITH AREAS OF FALLOW GARDEN AND COCONUTS. MOSTLY REGENERATION.

CROPS: PAW PAW AND COCONUT WITH SOME FALLOW GARDENS NOT UNDER CROPPING AT THIS TIME. CASH CROPS: NIL

SOCIO-ECONOMIC: NIL

Section 2

SOIL: LIGHT COVERING WITH CORAL OUTCROPS. GARDEN AREAS IN DEEPER SOIL IN DEPRESSIONS - SOME SWAMPY AREAS OF DARK PEAT SOIL. COCONUTS AND OTHER TREES SEEMINGLY GROW ON ROCK

WATER: NIL SURFACE WATER. SOME DAMP/WET SOIL IN AREAS USED FOR GROWING TARO

VEGETATION: PANDANUS COMMON. SOME AREAS OF BUSH AND REGENERATING BUSH. EXTENSIVE AREAS OF FALLOW GARDEN AND CROPPED GARDEN

CROPS: COCONUT, PAW PAW, POTATO, PANA, BANANA AND NUMEROUS WILD FOODS COLLECTED FOR EATING AND USE. CASH CROPS: NIL

SOCIO-ECONOMIC: NIL

Section 3

SOIL: MOSTLY A GOOD LAYER BUT STILL WITH NUMEROUS CORAL OUTCROPS. SWAMPY PEAT AREAS AT LAKE EDGE

WATER: NIL SURFACE WATER BUT WITH FRESH SPRINGS AT LAKE EDGE

VEGETATION: EXTENSIVE GRASS AREAS IN VILLAGE, BUT WITH NUMEROUS TREES BOTH DECORATIVE AND FOR FOOD SUPPLY - EG. BANANA, PAW PAW. SMALL AREAS OF GARDEN.

CROPS: COCONUT, PAW PAW, BANANA, AND SOME PANA/POTATO

SOCIO-ECONOMIC: PAID EMPLOYMENT ALMOST NON-EXISTENT. SOME VILLAGERS WORK IN HONIARA AND RETURN FOR HOLIDAYS. DIFFERING COMPLETENESS OF HOUSES WITH SOME HAVING IRON ROOFING AND TIMBER FLOORS/WALLS AND OTHERS BEING SOLELY LEAF HOUSES. ALL HOUSES IN NEED OF COMPLETION.
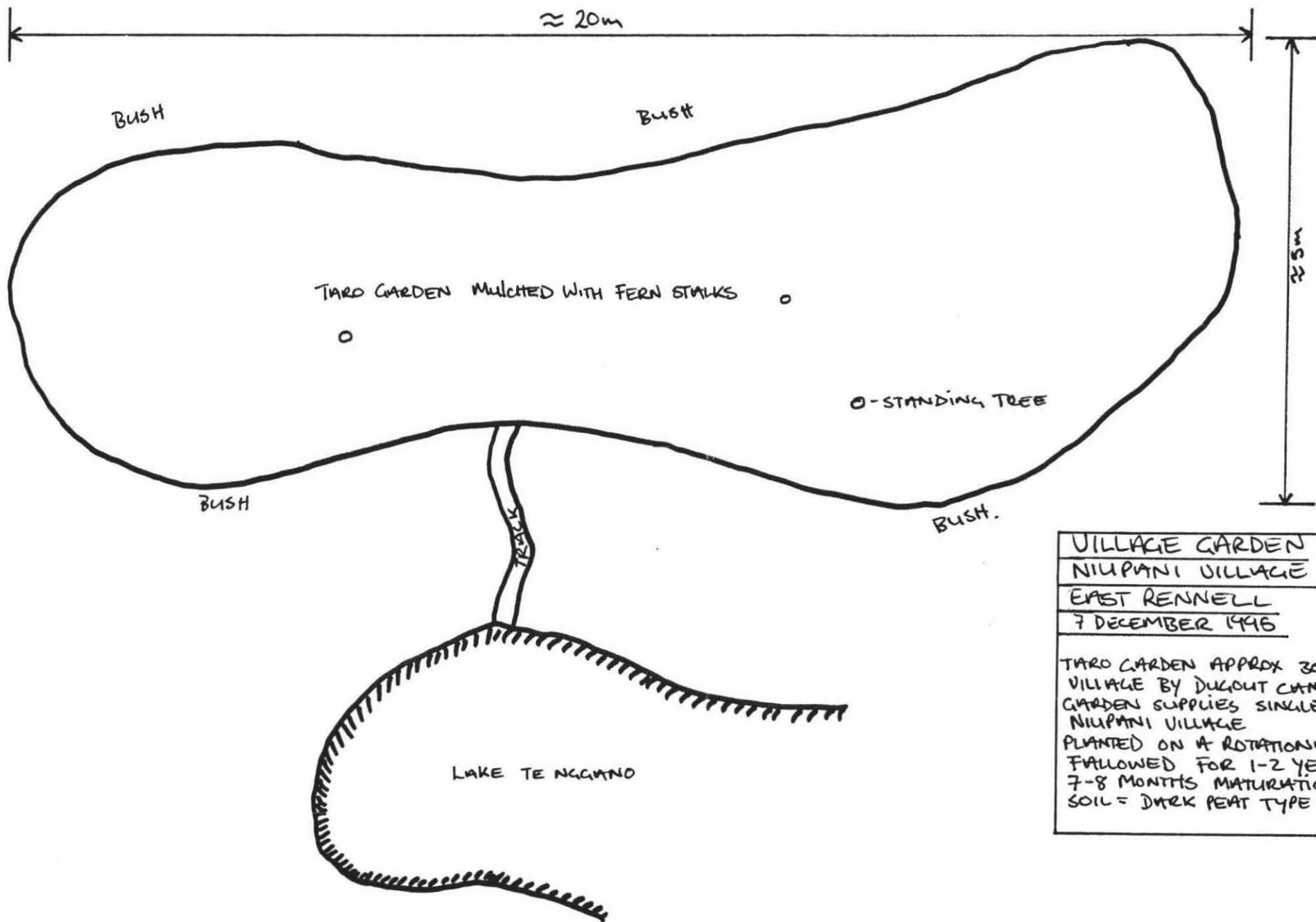
LAKE TE'NGGANO

LAKE PROVIDES FISH (TILAPIA), TRANSPORT (DUGOUT OR FIBREGLASS CANOE AND OUTBOARD MOTORS) AND WATER FOR LAUNDRY, WASHING, SWIMMING ETC

MONTHS OF THE YEAR	RENNELL EQUIVALENT (DATES AND TIMES DO NOT MATCH EXACTLY)	
MAY	TEGIMA	* HAKA TUU KAI UHIGAUA (KAI UU UU) START TO EAT PANA
JUNE	TEONO	* E MALOGO - EGAUUGA ITE MATUA CROPS READY IN THIS MONTH LEAVES DIE (ABOUT TO HARVEST)
JULY	TEHITU	* GHAIGI MANGA - PAKUPAKU ONA GAU EVERY VINE DIES * NA ASO TATA - (ATUA) BAD WEATHER SEASON
AUGUST	TEBAGU	* BOGA MAAGA MATE KAI * NA ASO TAAKI ITE ATUA CLEAR GARDEN AND START EATING CROPS BAD WEATHER CONTINUES
SEPT	TEIBA	* GHOLOBA SANGA MAAGA TIME FOR PLANTING
OCT	TEANGAHUGU	* GHOLOBA SANGA - LAUNGA EHA CONTINUE PLANTING AND HOPE FOR GOOD SEASON
NOV	PEGIA MATAKITAKI	* LAUAGO - HEE SANGA NO GARDENING AT ALL
DEC	PEGAIGOTO	
JAN	PEGIAHAKAOTI	
FEB	LAGIGHI MATAKITAKI	
MARCH	LAGIGHI GOTO	
APRIL	LAGIGHI HAKAOTI	

ASO TAAKI (HETUU TATA)

PEGIA
* MAGINONGA
* GEGEU HUA GAAKAU
* MOMONA AI NA KAUI
* SAAGO GHALI NA KAUI
* IHOAI TE A'GO
FINE WEATHER
FRUIT ON TREE RIPENS
INCREASED GREASE IN FISH
FISH GO ROTTEN QUICKLY
CRABS, SNAKE ETC. ALL GO TO THE
SEA, AND SEA CREATURES COME
TO THE BEACH

STARS
GOGOMI NA HETU'U
STARS GO DOWN

LAGIGHI
* ASO ATUA
* ASO KAI UPO
* MATANGI GALO
BAD WEATHER FROM THE WEST
TIME FOR EATING EELFISH
WEST WIND THE WHOLE TIME

HAKA TUU KAI UHI
TIME TO EAT YAM

SEASONAL CALENDAR
NIUPANI VILLAGE
EAST RENNELL
15 DECEMBER 1995

≈ 20m

≈ 5m

BUSH

BUSH

TARO GARDEN MULCHED WITH FERN STALKS   o

o

O - STANDING TREE

BUSH

BUSH.

TRACK

LAKE TE NGGANO

VILLAGE GARDEN
NIUPANI VILLAGE
EAST RENNELL
7 DECEMBER 1998

TARO GARDEN APPROX 30 MINS FROM
VILLAGE BY DUGOUT CANOE
GARDEN SUPPLIES SINGLE MALE FROM
NIUPANI VILLAGE
PLANTED ON A ROTATIONAL BASIS AND
FALLOWED FOR 1-2 YEARS
7-8 MONTHS MATURATION PERIOD
SOIL = DARK PEAT TYPE SWAMP

VILLAGE GARDEN
NIUPANI VILLAGE
EAST RENNELL
7 DECEMBER 1995

TARO GARDEN APPROX
10 MINS BY DUGOUT CANOE
FROM VILLAGE
PROVIDES FOR 2 ADULTS AND
SINGLE MAN
GARDEN AREA FALLOWED
FOR 1-2 YEARS
FALLOW PERIOD DEPENDENT
ON TIME TAKEN FOR
REGENERATION OF BRACKEN
TO 1½ metres in Height
TIME TAKEN DEPENDENT ON
SOIL FERTILITY

≈ 40m

≈ 20m

≈ 10m

TARO GARDEN
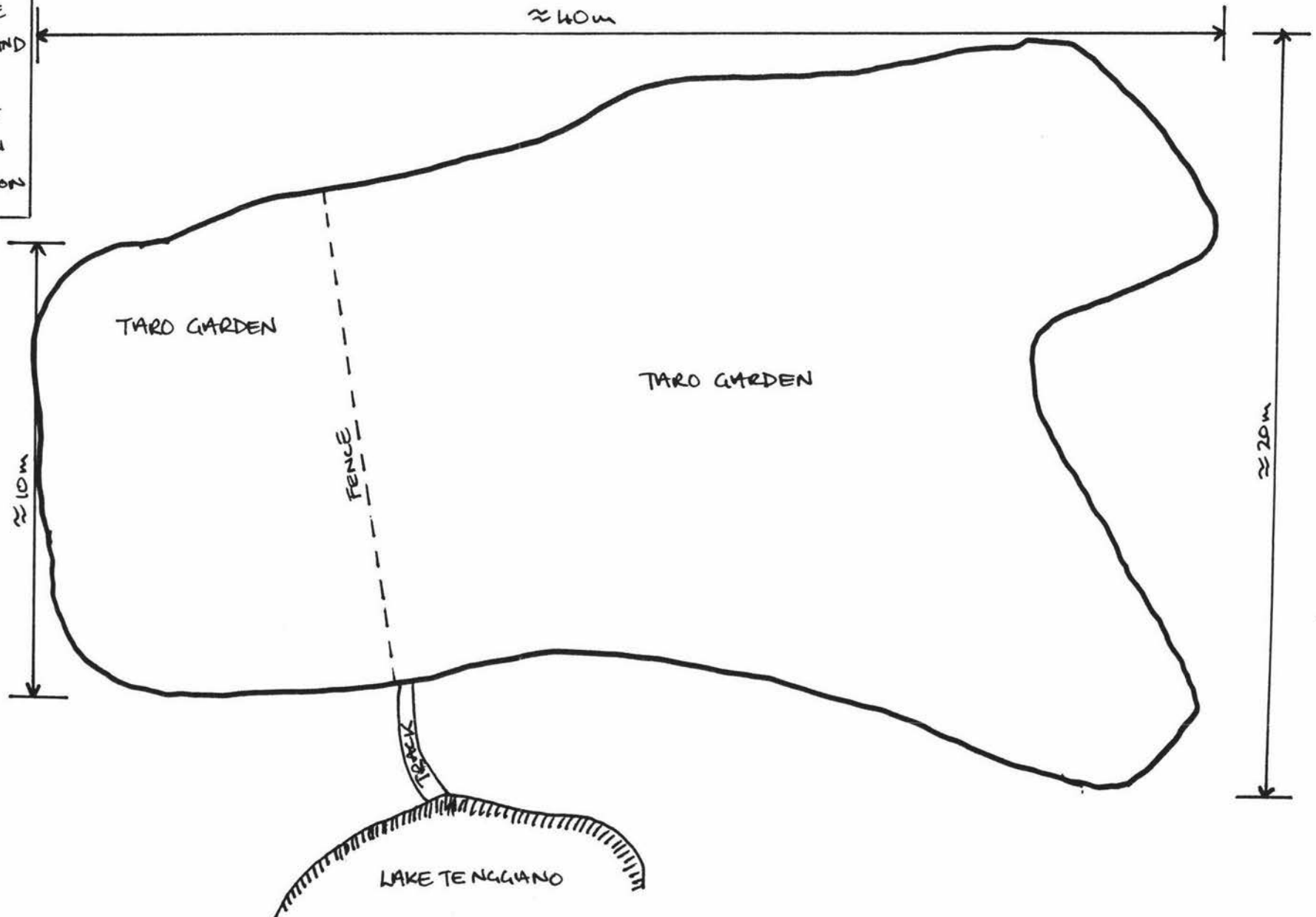
TARO GARDEN

FENCE

TRACK

LAKE TE NGGANO

PHOTO 1

BUSH TRACK TO SEA
ACCESS TO VILLAGE FROM
SEA
ROUTE FOR BRINGING
GOODS ETC FROM OUTSIDE
WORLD BEFORE THE ROAD
WAS PUT THROUGH FROM
WEST RENNELL

PHOTO 2

PAW PAW TREE
MOST EATEN AND
EDIBLE FRUIT.
CLOSE TO VILLAGE.
PLENTIFUL
MARKETABLE COMMODITY

PHOTO 3

CAVE
USED AS CYCLONE SHELTER
DURING A CYCLONE IT IS
NECESSARY TO TAKE
SHELTER IN ONE OF THE
MANY CAVES AROUND
THE VILLAGE.

PHOTO 4

PALM TREE FRUIT
EDIBLE AND KEEPS WELL
A LOT OF PREPARATION
IS NECESSARY - PEEL, TAKE
OUT KERNEL, SLICE, SOAK
IN WATER FOR 7-10 DAYS
THEN COOK IN OVEN
GOOD SOURCE OF FOOD
WHEN OTHER FRUIT IN
SHORT SUPPLY.

PHOTO 5

NEW SCHOOL BUILDING
BUILT UNDER EC REHAB
PROGRAMME BUT NOT
QUITE COMPLETE
ALSO INCLUDES PLAYING
FIELD
EDUCATION AND SPORT
ARE IMPORTANT IN THE
VILLAGE.

PHOTO RANKING : MEN
NIUPANI VILLAGE
EAST RENNELL
14 DECEMBER 1995

PHOTO 6

FRESH WATER SPRING
IMPORTANT SOURCE OF
WATER FOR COOKING AND
DRINKING
ONE SPRING SUPPLYS
WHOLE VILLAGE

PHOTO 7

WATER TANK
PROJECT UNDER CENTRAL
GOVERNMENT TO UPGRADE
WATER SYSTEM
ALSO PROBLEM BECAUSE
WATER TANK LEAKS AND
IS TOO SMALL FOR VILLAGE
COLLECTION AREA IS 5-6
SHEETS OF IRON AN IS
NOT BIG ENOUGH.
IRON BLOWS AWAY IN
CYCLONE.

PHOTO 8

LAKE TENGGANO
POTENTIAL SEEN FOR
DEVELOPMENT IE MORE
OUTBOARD MOTORS AND
BUILDINGS
BUT INDECISION AS TO
WHETHER WE NEED TO
CHANGE THE ENVIRONMENT
OR PEOPLE'S PERCEPTION
OF IT.

PHOTO 9

TARO GARDEN
THE MOST IMPORTANT AND
MOST POPULAR PRODUCT
OF THE GARDEN
IMPORTANT BECAUSE IT
GROWS IN SWAMP AND IS
THE MOST COMMON CROP
FOOD STAPLE.

PHOTO 10

COCONUT PALM
PROVIDES DRINK, COPRA,
DRY COCONUT, MILK, LEAF
FOR HOUSE, BASKET,
BROOM, FIRE, TORCH
EVERYTHING THAT THE
COCONUT PRODUCES IS
IMPORTANT TO THE
VILLAGE.

PHOTO 1

BROADLEAF PANDANUS
PLANTED BY VILLAGERS
USED FOR MAKING
MATS, UMBRELLAS
AND FOR WALLING
AND THATCHED ROOFING
OF HOUSES
PHOTO TAKEN BECAUSE
THIS IS A VERY IMPORTANT
RESOURCE FOR WOMEN

PHOTO 2

WILD PANDANUS
MEDIUM WIDTH LEAF
USED FOR MAKING
MATS, UMBRELLAS
ETC
PHOTO TAKEN BECAUSE
THIS IS A VERY
IMPORTANT RESOURCE
FOR WOMEN

PHOTO 3

NARROW LEAF PANDANUS
USED FOR MAKING
BASKETS, FINE SLEEPING
MATS.
PHOTO TAKEN BECAUSE
THIS IS A VERY
IMPORTANT RESOURCE
FOR WOMEN

PHOTO 4

COCONUT
LEAF, NUT, CREAM, MEAT
WOOD ARE ALL IMPORTANT
RESOURCES.
THE WHOLE TREE IS USED
FOR ONE THING OR ANOTHER
EITHER FOR FOOD, WEAVING
BUILDING ETC.

PHOTO 5

WILD CABBAGE.
A SWEET TYPE OF
CUSTOM CABBAGE ON
RENNELL
IMPORTANT SOURCE OF
FOOD, PARTICULARLY
GREEN VEGETABLE FOR
ALL PEOPLE AT EAST
RENNELL

PHOTO RANKING : WOMEN
NIUPANI VILLAGE
EAST RENNELL
14 DECEMBER 1995

PHOTO 6

BANGOBANGO TREE
TREE WOOD USED FOR THE
LIGHTING OF FIRES.
IMPORTANT FOR WOMEN
BECAUSE IT IS VIRTUALLY
THE ONLY METHOD
AVAILABLE WITH WHICH
TO START COOKING FIRES

PHOTO 7

KAKAKE
WILD SWAMP TARO/CABBAGE
IMPORTANT SOURCE OF
FOOD FOR VILLAGE
PEOPLE PARTICULARLY
WHEN CULTIVATED FOOD
IS IN SHORT SUPPLY

PHOTO 8

HOUSE
PROVIDES SHELTER AND
A MEETING PLACE

PHOTO 9

FRESH WATER SPRING
IMPORTANT SOURCE OF
WATER FOR DRINKING
AND COOKING. THIS IS
ESPECIALLY THE CASE
WHEN TANK WATER IS
IN SHORT SUPPLY

PHOTO 10

LAKE TE NGGANO
IMPORTANT FOR
WASHING CLOTHES, FISHING
AND TRANSPORT