EXPANDING RURAL LAND TENURES TO ALLEVIATE POVERTY

by

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DECLARATION

This is to certify that the thesis has not been submitted for a higher degree to any other university or institution. The text does not exceed 100,000 words.

Parts of this work were published in refereed conference proceedings and journals as listed in Appendix 1.

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Kate Dalrymple

ABSTRACT

This thesis investigates the land administration framework guiding development of the rural poor to assess whether it meets sustainable development and poverty alleviation objectives set by current land policies.

This research was conducted in two main phases. The first phase explored the role of evolving land policy, land administration and tenure theories in the context of delivering sustainable development and poverty alleviation. Investigations were focused towards the design of land administration systems as a means of assisting national development in developing countries. Essential linkages between each of the components were reviewed to determine how they relate to poverty alleviation among the rural poor. This required a multidisciplinary literature search and analysis of materials from Geomatics, development and environmental studies, sociology and public policy.

However analysis of land policy and land administration at a theoretical level is not definitive. Empirical research was necessary to understand people to land relationships of the rural poor. Case studies in rural Cambodian villages were conducted as the second phase of research. The objective of these case studies was to dispel the popular land administration principle that assumes project designs can continue to rely predominantly on technical tools to provide tenure security for individuals. Field studies illustrated complexities surrounding socially-derived tenure arrangements of the rural poor within various social and environmental contexts. Informal, communal and customary people to land relationships underpin traditional natural resource management, use and access patterns. These localised relationships deliver vital security and organisational functions among rural poor societies.

A redefined land administration framework for addressing poverty alleviation within a sustainable approach was derived from these case study findings. The framework theory was then discussed and refined among world expert land administration researchers and consultants from economic, legal and agricultural fields.

The research shows that private titling alone will not deliver poverty alleviation and sustainable development to rural poor societies. These societies depend on socially-derived practices and have limited resources. They are usually unable to take advantage of formal administration services. However land policy goals can be achieved if a flexible land administration framework is created. This framework must be characterised by secure land and resource access and tools that appropriately incorporate local conditions, capacity and practices.

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interpretations of my experience with these people serve to help and not hinder progress and improvement for the lives of the rural poor.

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List of Acronyms

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Agency for International Development
CBNRM	Community Based Natural Resource Management
CIM	Cadastral Index Map
CPMO	Central Planning and Management Office (of LMAP)
DANIDA	Danish International Development Agency
DFID	Department For International Development (UK)
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agricultural Organisation of the United Nations
FIG	International Federation of Surveyors
FINNMAP	(Consultancy Company of Finland)
GIS	Geographic Information System
GPS	Global Positioning System
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
IBRD	International Bank for Reconstruction and Development
ICT	Information Communication Technology
IFAD	International Fund for Agricultural Development
ILC	International Land Coalition (Division of International Fund for Agricultural Development)
ILO	International Labour Organisation
IMF	International Monetary Fund (of The World Bank)
JICA	Japanese International Co-orperation Agency
LMAP	Land Management and Administration Project
MDGs	Millennium Development Goals
MLMUPC	Ministry of Land Management, Urban Planning and Construction
NGO	Non-Governmental Organisation
NRM	Natural Resource Management
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development (major industrialised countries)
OHCHR	Office of High Commission for Human Rights
PDA	Population and Community Development Association (Thailand)
PLUP	Participatory Land Use Planning
Riel (R)	Cambodian Currency (1USD = 4100 R)

List of Acronyms cont'd

SDI	SPATIAL DATA INFRASTRUCTURE
SIDA	SWEDISH INTERNATIONAL DEVELOPMENT CO-OPERATION AGENCY
UN	UNITED NATIONS
UNCED	UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT
UNCHS	UNITED NATIONS CENTRE FOR HUMAN SETTLEMENTS
UNDP	UNITED NATIONS DEVELOPMENT PROGRAM
UNECE	UNITED NATIONS ECONOMIC COMMISSION ON EUROPE
UNEP	UNITED NATIONS ENVIRONMENT PROGRAM
UNTAC	UNITED NATIONS TRANSITIONAL AUTHORITY IN CAMBODIA
VDC	VILLAGE DEVELOPMENT COMMITTEE
WB	THE WORLD BANK
WFP	WORLD FOOD PROGRAM
WRI	WORLD RESEARCH INSTITUTE
WTO	WORLD TRADE ORGANISATION

Cambodian Terms

PHNOM	MOUNTAIN
PHUM	VILLAGE
SLAP	RIVER

CHAPTER 1 – INTRODUCTION

Things wild and free are being destroyed by the impersonality of our attitude toward the land …There are some who can live without wild things, there are some who cannot.
By Aldo Leopold, 1949.

1.1 Introduction

People to land relationships are complex and diverse. They may be: formal or informal; weak or strong; culturally significant or materialistic; tradeable and inheritable or not; exploitive or sustainable; they may be all, or none of these. Typically they are a myriad of arrangements supporting competing interests for the distribution, use and control of resources. Harmonising and formalising these resource interests for the most equitable and sustainable use in terms of economic, environmental and social desires, is a major challenge: a challenge that the land administration discipline attempts to address.

Effective and efficient land administration arrangements can provide a central framework for ensuring a country's capacity to deliver economic growth and sustainable development. Together with poverty alleviation, these three themes are strongly advocated as essential policy goals. However, often land administration systems formalising people to land relationships fall short of delivering these policy goals. Current system designs relying too heavily on prescribed Western principles are inappropriate for use among poor, subsistence rural and traditionally organised societies.

This chapter introduces the thesis topic and the motivation for research and states the problems, aims, objectives and scope of this thesis. The research approach and thesis outline are summarised.

1.2 Background

1.2.1 Development

Globalisation has made us aware of the "increasing extent, intensity, velocity, and impact of world-wide interconnectedness" (Held, 2004). The realisation of globalisation saw the concept and principles of 'sustainable development' emerge. In Western societies, pursuit of sustainable development instigated more comprehensive decision making that is mindful of balancing economic, social and environmental pursuits capable of meeting the needs of both present and future generations. This is a vast improvement on the delivery of post-war development agendas that were exclusive, narrow, and economically driven.

Globalisation may have divided countries or brought them closer, but a 'sustainable development' conscience challenges every country to harmonize its actions and raise its accountability (Kusek and Rist, 2004). Considerable attempts are also being made to bridge the gap between developed and developing economy nations. Research suggests that 'donors seeking to promote peace and development should tackle land issues in recipient countries more systematically, more carefully and in a more coherent manner' (Pons-Vignon and Solignac Lecomte, 2004). This is increasingly reflected in development activities aimed at sharing and learning across borders, and understanding the contribution made by different practices to achieve sustainable development.

The ultimate aim of development assistance from one nation, government, company or individual to others is to improve the quality of life for the beneficiaries. This exchange or transfer of financial, technical, knowledge-based or hands-on assistance requires a level of understanding of the context in which aid is delivered to the intended recipients without putting others at risk.

1.2.2 Formalising Land Concepts and Policy

Across the globe peoples' appreciation of and relationship to land and natural resources are diverse. Land may be, as physical as the earth we walk on; as political as the territory we fight over; as fiscal as the next site we develop; or as resource dependent as the rice harvest that delays the onset of poverty.

Land and abstract concepts in land are seen as the wealth, and wealth potential, of developed and developing countries respectively. Land policy plays a

critical role in guiding these opportunities within society. Today, land policy is underpinned by sustainable development objectives. A commitment to alleviate poverty among developing nations is a second and equally crucial theme addressed by land policies. National land administration systems are a means of delivering land policy goals.

While the implementation and operation of formal land administration systems are considered essential and a core element in national development, they remain problematic for most of the world's nations. Developed countries are continually searching for new ways to equitably and efficiently disseminate increasing amounts of data, to overcome institutional barriers, and to identify more efficient and beneficial functions within the context of achieving sustainable development.

Developing nations on the other hand are at different stages of formalising land administration systems as part of their national development strategy. Land administration for development is also often employed to address poverty reduction and social stability issues. The formalisation process is driven by the need to provide security of tenure and equitable land distribution, resolve disputes, and establish best practice resource use and management. This process typically requires the identification and registration of land ownership reflecting Western concepts and technologies. However, these formalisation techniques often fail to deliver overriding objectives to the majority of beneficiaries, where poverty is overwhelming, social stability is lacking, lawlessness is common and culture and tradition are strong.

1.2.3 Extending Land Administration Designs

History shows that designs of land administration systems emphasised economics and markets favouring individualism. The post-WWII (World War II) focus was limited to a tool that primarily secured private property rights requiring formal arrangements. While this strategy produced some successful results, namely in Thailand and Malaysia, many more nations are yet to reap real benefits.

Formalisation in today's globalising world cannot be escaped. Land formalisation is inevitable. Problems arise when Western concepts unknown to traditional arrangements are used for guiding development. The question is how to improve this process especially if transitional paths based on localised and

dynamic development solutions are used. Land administration systems capable of delivering sustainable development and reducing rural poverty, particularly in Asia, need to replace individual tenure with more flexible tenures reflecting the scope and dynamism of people to land relationships and their local significance. One third of society lives according to communal based people to land relationships (Deininger, 2003). These relationships predominantly occur in rural areas of developing countries and rely on tenure arrangements sourced in social practice not law.

Sustainable and participatory based approaches consider using a "softer" systems approach to development (Augustinus, 2003). Quantitative, by contrast to pure qualitative, approaches and measures of development consider understanding contextual relationships and externalities rather than chiefly economic indicators. Softer system approaches have gained momentum in both developed and developing nations since the early 1990's as a result of collaborative international efforts.

The events which defined this mode of thinking started with the 1992 United Nations "Rio Earth Summit" advising on a localised agenda for sustainable development. The following year a United Nations meeting called for a reaffirmation of member nations commitment to Human Rights. In similar vein and in response to changing attitudes towards development, The World Bank reviewed their land policy and poverty reduction message (Deininger et al., 2003) reinforcing the shift in priorities towards more sustainable and participatory development goals. United Nation organisations and Government aid development assistance are also increasingly supported by non-government organisations working closely with people and projects on the ground.

1.2.4 Contributing to Poverty Alleviation

Poverty is a livelihood condition estimated to affect more than 1.2 billion people around the globe. Of those suffering, approximately 75 per cent are people living and working in rural areas (IFAD, 2001). The progress of developing countries and poverty problems are exacerbated by the alarming rate of population expansion, the exploitation and degradation of land and natural resources, health epidemics, and sustained political instability.

Access to and use of land and other resources is critical for the poor (Deininger, 2003a). In developing countries ‘access to land allows the poor to make productive use of family labour, improve their nutritional status, smooth consumption, and improve their income and well-being’ (Deininger and Feder, 1999). Therefore providing an alternative path to titling in rural areas and dealing with poverty issues at their source before they shift to the urban sector is an important poverty alleviation strategy.

Flexible and transitional aid strategies recognise the current state of affairs, capacities and desires of societies seeking assistance. This requires an understanding of the dynamic and unique people to land relationships that are dependent on various economic, environmental and socio-cultural factors (Ting and Williamson, 2001). Communal, social and informally defined tenures provide a level of security and regularity for members within the group. Until now, these diverse dimensions of tenure were neglected by land administration development projects because designs relied on implementation through ‘old type’ tenures borrowed from colonial states, typically individual private and state tenure.

Land policy and land administration arrangements should reflect tenure principles and social and environmental characteristics. Currently there are few guiding tenure principles, capable of facilitating sustainable land policy development to comprehensively guide land administration systems in development situations. The limitation examined here is the failure of designs for rural tenure to incorporate all people to land relationships, especially subsistence farmers.

Current land administration systems for national growth and poverty alleviation in transitional and developing countries identify formal tenure types. These systems deliver tenure security only through formal evidential documents, typically title or deeds certificates. Through these methods, land administration services provide a platform for land owners and foreign companies to participate in legal land market activities that help stimulate national economic growth through more intensive land and production activities, investment opportunities, and taxation.

While citizens in many countries participate in formal land market activities for mobilizing and controlling access to and security in land, there are numerous

societies for whom this is alien; the rural and subsistence poor in Southeast Asia are an example. Land market commodification can be regarded as an untapped investment potential in developing countries (de Soto, 2000). However, unless societies have the capacity to enter market arrangements and investment agreements, resources aimed at developing commodification could be put to more beneficial use.

The increasing importance of recognising alternative forms of tenure, such as common property and customary rights, is clear from the recent World Bank publication "Land Policies for Growth and Poverty Reduction" (Deininger, 2003). Placing value on social and environmental interests in people to land relationships is critical for tenure security to be achieved.

Secure land tenure is important for economic, social and environmental development and is central to alleviating insecure shelter, inaccessible investment and credit opportunities, and short-term resource exploitation and mismanagement. Security of peoples' livelihood resources is essential for the following reasons: it influences optimal land use; reduces environmental degradation; decreases the need for vulnerable people to expend valuable human and material efforts protecting their resources; supports sustainable livelihoods often for immediate daily food production and/or economic production; as well as providing a foundation for the expression of social relationships and cultural values (Deininger, 2003; FAO, 2002).

Tenure arrangements should serve the immediate needs of the community and evolve according to the dynamics of people to land relationships.

> "The emergence of land markets in developing countries sometimes concentrates property rights in individual 'owners', restricting the rights held by other claimants under customary tenure systems. By neglecting livelihood and environmental externalities, this may undermine the objectives of sustainable development." (Wiebe and Meinzen-Dick, 1998)

Land tenure systems must be integrated and delivered within a holistic framework that recognises various interests in land. Well designed land administration systems provide a regulatory opportunity to coordinate all the dimensions of land and resource management, and individual and group interests

related to property. Land administration frameworks comprise of a number of project design elements such as land management principles, land tenure arrangements, land policy, legal and institutional building, mapping and surveying, and technical and human resource capacities (Williamson, 2001a). This research focuses these services towards land arrangements that improve the livelihoods of subsistence rural societies in developing countries.

As described in this introduction, this research addresses themes including: sustainable development and the international development agenda, application of land administration in development, and land and resource arrangements supporting the rural poor.

1.3 Research Outline

1.3.1 Problem Statement

Land administration theory sets sustainable development and poverty alleviation as essential policy goals. However, current land administration systems used in rural poor development areas focus too heavily on the delivery of individual tenure security. This focus limits the delivery of sustainable development objectives and poverty alleviation because they inadequately address informal, communal, and customary tenures used in rural environments.

1.3.2 Hypothesis

Tenure arrangements in subsistence-based poor rural societies are complex and require alternative strategies other than private titles to alleviate poverty and deliver sustainable development through land administration.

1.3.3 Aim and Scope

This thesis aims to establish a land administration framework for delivering security of people's interests and rights in land and natural resources to suit the environmental and social needs of the subsistence rural poor in developing countries.

Attention on land administration systems previously focussed on technical and resource options to improve the success of systems used for development assistance. By contrast, this study focuses on understanding fundamental people to

land relationships and tenure regimes, which should ultimately underpin land policy decisions and land administration system design.

This thesis initially develops ideas from global trends and the practices of land administration projects particularly in Asia. In the context of promoting sustainable and effective development assistance, this thesis explores the preoccupation with private property rights that underpins the popular land administration models and guidelines. The research investigates traditional and informal rural land and resource tenure arrangements, tenure security and management practices and emerging new methods of bringing these into land administration frameworks to enhance the effectiveness of services provided to the rural poor.

Case studies are used primarily to identify people to land relationships of the subsistence-based rural poor in Southeast Asia and form the basis of recommendations around this group. Wider applications for other societies including developed nations with strong sustainable development mandates, are also identified.

Differences between cultures, countries, landscapes and development, make comparisons and generalisations difficult. To obtain consistency, the research focuses on drawing conclusions for the subsistence rural poor in Asia; however, examples and experiences from other regions make valuable contributions.

1.3.4 Research Objectives

Development of a framework capable of incorporating rural tenures in support of sustainable development and poverty alleviation involved the following objectives:

- Investigation of land policy for sustainable development and poverty,
- Investigation of the elements of land administration systems project designs to support sustainable development objectives and development,
- Description of dimensions of tenure typology as they relate to a complex set of rights enjoyed by various people to land relationships,
- Exploration of these dimensions of tenure relative to rural societies in developing countries,

- Identification of unique characteristics of traditional rural tenures and their current role in formal land administration systems,
- Design of a framework allowing more comprehensive integration of the alternative dimensions of tenure within a cadastral based land administration system that serves the needs of the rural poor.

Through these objectives, this thesis aims to identify a flexible framework for land administration reflecting the interests of the subsistence rural poor who predominantly act according to informal, social, and traditional practices.

1.3.5 Research Methodology

Three types of research methods were used to investigate the problem and hypothesis proposed in this research: literature reviews, empirical field case study, and expert analysis. The research design is illustrated in Figure 1.

Initial investigations of the first four objectives required a comprehensive analysis of land policy and land administration systems for development in the global context of sustainable development. Books, journals, organisation reports, conference proceedings and information published over the World Wide Web (www) were used to collate a range of information for literature reviews.

These studies highlight the linkages and gaps in land policy for sustainable development and poverty alleviation, the role of land administration systems and the underlying theme of tenure arrangements. During literature investigations a reconnaissance trip to Thailand and Cambodia substantiated and highlighted issues uncovered in the reviews. A two month tour provided the researcher with observations of real issues faced by two countries undergoing land administration projects. The literature reviews and reconnaissance trip provided a background for defining the problems associated with rural tenure systems in current land administration system project designs.

Using assumptions formulated from the literature and reconnaissance trip views, a case study was designed to further uncover the realities of rural land tenure arrangements in a poorly developed country in Asia. Villages in the rural provinces of Cambodia were used as case studies. Study of an immature system in a highly indebted poor country focused on efforts to reduce poverty and deliver sustainable development. A nation-wide land management and administration

project is in progress in Cambodia. Investigations of rural land tenure scenarios allowed study of people to land relationships prior to and during influence by concepts of Western land ownership.

Village level participants in Cambodia were used to help explain and identify differences in land ownership, use management and tenure security concepts. Participant observations and in-person interviews were used to identify and measure the social, environmental and economic needs of people within their surroundings. A range of interview and data collections techniques were used to gather, communicate and verify information. This research required obtaining information from different levels of the social and government hierarchy, as well as foreign aid experts and non-government organisations (NGOs). Working closely, yet as an independent researcher, with the Land Management and Administration Project provided key opportunities in the understanding operational context of a project. This helped to keep concepts and theories within the constraints of practice.

A total of four months was spent in Cambodia. A significant proportion of this time was used to conduct participant observations and village case study interviews. Time was allocated prior to field visits to prepare the case studies and logistics. On return extra time was taken to analyse and discuss findings with locals and foreign experts.

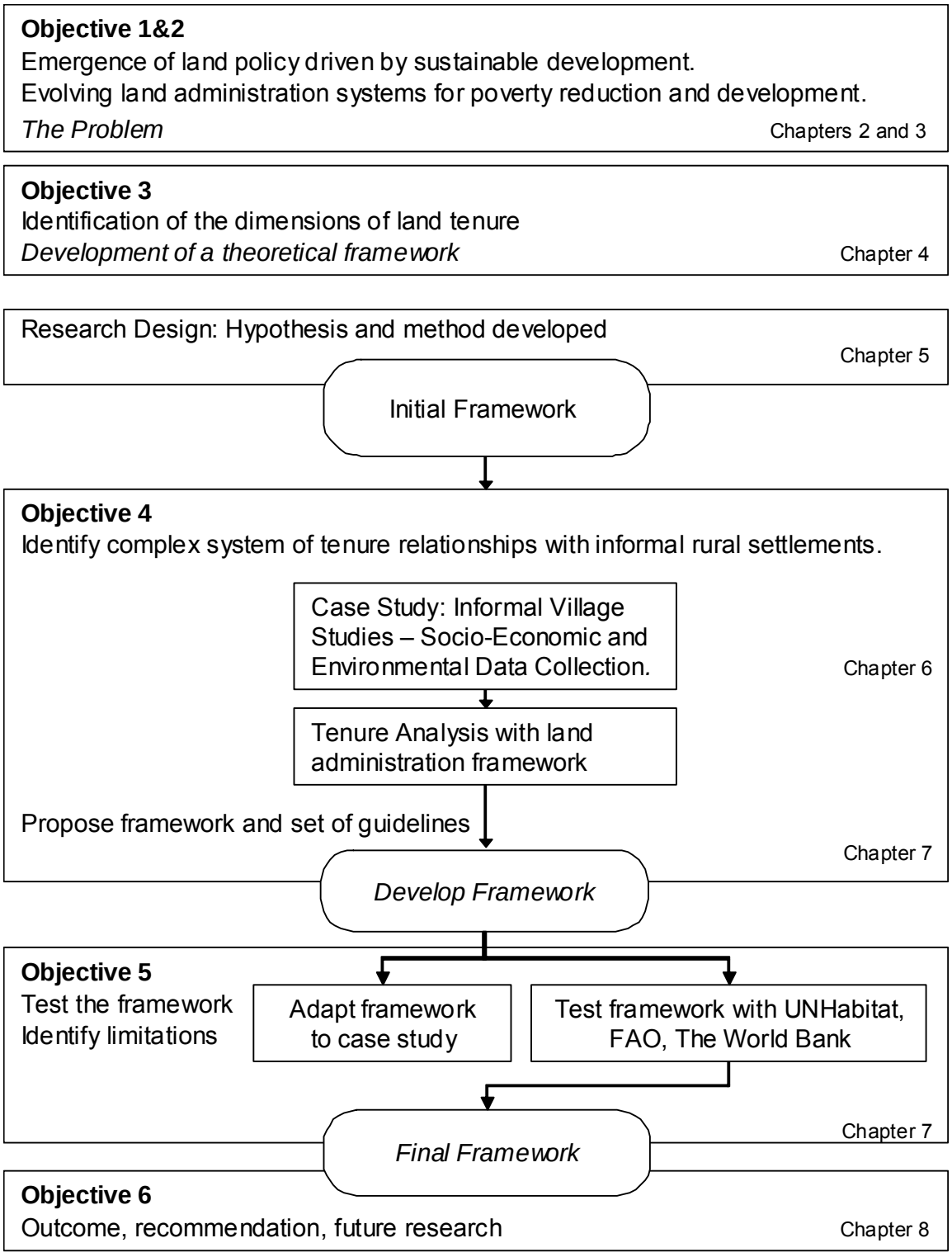
Based on field investigations and literature reviews, a land administration framework applicable to the Cambodian situation was articulated. This framework identified the gaps and problems of current land administration system designs in the context of projects aimed at delivering sustainable development and alleviation of poverty.

The thesis hypothesis and devised land administration framework were tested and revised through conference presentations and discussions with experts. Most experts from the land policy, tenure research and project development divisions were visited at The World Bank, Washington D.C., United Nations Habitat headquarters, Nairobi, and the Food and Agriculture Organisation, Rome.

Using the revised land administration framework, land policy recommendations for sustainable development and poverty alleviation were

proposed for generic use and consideration in future project designs that impact on rural tenures. Future research was suggested to resolve unanswered gaps in the land administration framework.

Figure 1 - Research Design relative to Objectives and Thesis Structure



1.3.6 Contribution to Knowledge

This research makes a contribution to the gap of knowledge that has hindered successful implementation of land administration projects globally. This thesis proposes changes to the formal land administration paradigm to reflect the policy goals of sustainable development and poverty alleviation. A more flexible framework must be applied in land administration strategies to deliver sustainable development and poverty alleviation among rural poor societies, particularly those with subsistence livelihoods. This framework must be characterised by: an acknowledgement of all tenures, not just individual tenure; secure access to all natural resources; and tools appropriate for local practices. Findings from the developing country scenario also make a valuable contribution towards the issues and practicalities of incorporating a wider range of tenures to better deliver sustainable development in developed nations.

The context of this thesis is the increasing scrutiny of international development and the increasing accountability and transparency required for projects aimed at sustainable development objectives and poverty reduction goals. This is where the research exploration begins.

1.4 Outline of Thesis

This thesis has three parts. Part one has background chapters to introduce current theories and practices. Part two investigates the problem through case studies and presents empirical research in Chapters 5 and 6. The third part, Chapters 7 and 8, are a synthesis of findings for informing policy and project designs, testing, recommendations and conclusions.

In part one, Chapter 1, an understanding of the three main topic areas and their interrelationship are presented: Land Policy for Development; Land Administration for Sustainable Development; and Land Tenure. Chapter 2 examines global trends of sustainable development with particular attention on the instruments that refocussed attention and elevated consideration of social and environmental issues. Delivery of sustainable development through land policy requires targeting poverty alleviation particularly in rural poor societies. Linkages between sustainable development, poverty alleviation, and land policy are

explored. Current strategies and stakeholders for development through land policy goals are also described.

In Chapter 2 sustainable development and land policy concepts are explored through the works of environmental experts, international treaties, multinational organisations, governments, development agencies and other academic sources. The following chapter outlines the re-engineered role of land administration systems to support sustainable development and identifies current popular models at a national scale. Chapter 3 also reviews land administration system project designs as national development strategies for developing countries, closely examining the set of principles and approaches advocated. Chapter 4 introduces the scope of people to land relationships expressed through evolving land tenures. This includes a discussion of the complex set of rights practised by different societies. Both institutional and informal relationships and dependencies on land are explained. Further to this tenure security theory is investigated.

The second part of the thesis designs and describes empirical investigations of the research. Chapter 5 initially highlights the issues raised from the literature review to justify the objectives and hypothesis proposed for this research. This information informed the preliminary framework used to identify areas for field study investigation. The field study research approach is described according to the objectives. This chapter includes the justification of the research strategy and selected case study sites. Case study findings are used to develop a new land administration framework.

Chapter 6 describes and analyses empirical case study investigations detailing the characteristics of tenure and associated issues in the context of rural poor societies. This chapter is designed to draw attention to complex social and environmental tenure related issues of the rural poor in Cambodia. Analysis revealed specific factors required for consideration in the development and design of a new land administration framework.

Chapter 7 discusses testing of the key research findings and development of the final framework through analysis and expert consultation. This framework is formulated by integrating principle ideas from the background chapters with characteristics of rural poor people to land relationships exposed through the case study findings. The chapter summarises the overall findings focusing on the

design of a new paradigm that endeavours to expand the flexibility of land administration frameworks using land and resource tenure as a key component delivering sustainable development and alleviating poverty. Chapter 8 presents key recommendations and research conclusions.

CHAPTER 2 – LAND POLICY FOR DEVELOPMENT

Sustainable development requires more than market-led growth; it also requires attention to maintaining the environment and the livelihoods of all members of society.
By Wiebe and Meinzen-Dick, 1998

2.1 Introduction

This chapter explores evolving sustainable development concepts since emerging within the global conscience in the early to mid 1970s. The sustainable development momentum described concentrates on those issues principally affecting people to land relationships. The second aim of this chapter is to illustrate how sustainable development theory has permeated development strategies through land policy.

The chapter defines the historical context of sustainable development, defining the significant events, publications, and evolving theories and concepts. The following sections investigate in more detail sustainable development objectives that identify people to land relationships vital for consideration in development strategies. The final section focuses on development strategies for sustainable livelihoods of the poor.

2.2 Environmental Sustainability Theory

2.2.1 Environmentalism through History

Although regarded as a modern term, "environmentalism" has been emerging in developed and industrialised societies for over a century and today has become an important part of the global social fabric (Kovarik, 2001). The natural environment of complex physical, chemical and biotic factors is intrinsically linked to human existence through our dependence on natural resources to support

survival. The 'people to land' relationship evolves from individuals and communities interacting with their natural environment through use, management, and tenure practices. Western society's evaluation and understanding of the natural environment are gradually improving to better reflect this delicately balanced relationship.

At present scientists believe the natural environment is capable of supporting human, animal and plant life on earth, albeit inequitably. However human activities are placing increasing stress on the natural world as we continually strive to improve living standards. Simple energy production, long before the industrial revolution, was found to produce air and water pollution and contribute to forest and land degradation. As natural environment conditions worsened due to increasing populations and use of resources, externalities began to have direct effect causing serious public health and agricultural problems (Kavorik, 2001).

By the 1700's Western society was becoming more enlightened and "reason", an antidote to "superstition", was more appreciated (Kavorik, 2001). Theories advocating reason to solve these problems started to emerge. In 1798, English political economist, Thomas Malthus, proposed a highly debated population theory about the doubtful future survival of the human race. His essays predicting that finite global resources in the future would not be able to support increasing population if left unchecked continue to influence policy decision, as seen in China's "One Child" policy. This population theory however did not take into account drastic modifications, improvements and transformations of resources that would evolve during the Industrial Revolution of the 1800s allowing production to increase and continue to feed expanding populations.

The Industrial Revolution spread quickly around the world in the late 18th and early 19th centuries. It was the inception of mass energy production that led the way for large-scale factory-based production of goods. Fossil fuels, comprising of coal, oil and gas, were used to generate steam power and electricity. This had vast application to automate typically manual processes and increase output.

The Industrial Revolution produced great societal change. Agricultural changes significantly improved land productivity; industrial inventions created new technological opportunities; and urbanization placed new demands on once

small metropolises. By the early 20th century scientists and social activists, intimate with the natural environment, sounded concerns over resource use in an emerging consumerist society (Kavorik, 2001). Through the next few decades of war more progress was made towards modernizing society: technology and energy production boomed seemingly ignorant of the environmental destruction being caused.

2.2.2 Post War Globalisation and the Environmental Movement

Once World War I activities were over, innovations surfaced to spur a second wave of rapid progress across many Western nations. This was accompanied by trends in globalisation, urbanisation, and growing economies of trade. Again mechanisation improvements and increasing consumerism, particularly enjoyed in Westernised lifestyles, came at serious environmental costs.

Development encouraged better quality land tracts to become concentrated into large land holdings for mechanised, pesticide, chemical fertilizer-intensive monocultural production for export (Rosset, 2001). Compounding human activities of energy production, urbanisation, resource depletion, deforestation and increased chemical use, particularly in developed nations, drew on massive amounts of finite natural resource deposits to fuel development. Other specific land problems such as soil compaction and acidity, erosion, waterlogging, and fertility and biodiversity loss lead to a large decrease in productive capacity levels (Rosset, 2001).

Liberalisation of Western society in the 1960s opened the door for many truths to be revealed. Western social conscience was questioned by popular movements in civil rights, particularly the freedom of speech and social equity. This paved a way for proactive environmental pressure groups to raise awareness and concern about growing environmental problems. At this time there was enough international interest and stability for attitudes and actions to take effect. A notable voice in environmental activism was that of Rachel Carson through her 1962 publication of Silent Spring, which was a confronting and timely piece of writing. It was a landmark entry for environmental discourse. A female voice in the age of Western liberalisation; it was by no means silent. It truthfully and

directly unveiled the destructiveness of human activities on finite natural resources. During this same period ecologist Garrett Hardin expressed the jeopardisation of sustainable development and his Malthusian concern as a "tragedy of the commons". The common use of natural resources would cause anarchy, overuse and degradation because of the human desire to extract the greatest self benefit when in competition with other users of a resource (Hardin, 1968). This argument strongly advocated for increased privatisation of resources.

The natural balance of nature and global human survival were being questioned at a time when noticeable disparities between north and south countries were occurring (Ehrlich, 1971). As regional pollution and acid rain took its toll on Northern European countries, drought and starvation intensified in Africa, and exhaustive forest destruction across Asia and South American continents were exposed.

Privatisation was seen as contributing to regional environmental degradation. Issues had to be dealt with not just by individuals, not by single countries, but as global responsibilities.

2.2.3 Realising Environmental Issues

The earth is increasingly under the watchful eye of scientists, researchers, academics, international organisations and corporations to predict the future, manage risks and improve living standards. The WorldWatch Institute publishes *State of the World* reports annually detailing the extent and urgency of global challenges. Consumption is as present the greatest constraint affecting sustainable use of natural resources. The following are just a few examples of the stress human impact is having on global natural resources (Table 1). While some of the statements in table one are speculative, they undeniably highlight the interconnectedness of human activities and environmental resources.

Table 1 - Environmental Predictions

WATER
• Studies stay withdrawal of the world's water supply for domestic, industrial, and livestock use is projected to rise at least 50 percent by 2025 [October 2002]. • UN reports that 263 river basins are shared by two or more nations, creating potential conflict over water for roughly 40 percent of global population [March 2003].
FOOD
• World Food Programme (WFP) warns that 40 million people in Africa risk starvation due to weather factors, health issues, civil strife, and economic policies [December 2002]. • Scientists report industrial fishing has killed off 90 percent of the world's biggest and most economically important fish species [May 2003].
CLIMATE
• Australian report says human-induced climate change is a key factor in severity of the worst drought in the country's history [January 2003].
POPULATION
• United Nations Population Division projects world population to increase 41 percent by 2050, to 8.9 billion, 99% of this global population increase is projected to occur in developing nations. • 16% of the world's people buy 80% of all consumerables. • The proportion of people living in cities looks set to grow from 40 percent in 1980 to 60% in 2020, with Africa and Asia projected to increase by 71% and 46% respectively.
ECOSYSTEMS
• Report says Amazon deforestation increased 40 percent compared with 2001, and Brazil registers second highest clearance figures in 15 years [June 2003]. • UN report says number of the world's protected areas has passed 100,000 covering a land surface bigger than India and China combined [September 2003].
ENERGY
• Gates at Three Gorges Dam are shut and China's Yangtze river starts filling the reservoir, which will have generating capacity of 18.2 gigawatts by 2009 [June 2003]. • Indigenous leaders delegation from Ecuador and Peru go to Washington to put a human face on a 400,000 hectare oil development concession operating in their ancestral territory, a 1.6 million hectare pristine rainforest environment.
TECHNOLOGY
• Between 1997 and 2002 the number of telephone lines grew by 40% and the number of cell phone users grew by 547%
POLITICS
• Only 44% of the world's population live in stable democratic states [free and fair competitive elections between independent political parties decide on executive power]. • Only 1 person in 10 thinks that their government responds to the people's will. (Starke, 2004)

2.2.4 Environmental Conscience Evolves

Visible signs of environmental degradation, as a result of human activity abuse, instigated the first international awareness event. The United Nations Stockholm Conference on the Environment, held in June 1972, resulted in the *Stockholm Declaration and Action Plan*. This plan made recommendations regarding the conservation of natural resources, education, human settlements and pollution. Following the event, several conferences were held on a variety of topics between 1974 and 1981 by the United Nations. Issues of population, food, women, habitat, water, desertification, climate, science and technology, agrarian reform and sources of renewal energy were repeatedly discussed. Various people involved in conservation, wildlife and environmental programs joined forces to prepare the 1980 World Conservation strategy. In 1983 the United Nations responded by establishing the World Commission on Environment and Development (UNCED).

The essence of the world's increasing environmental and development issues were captured during the 1987 'Our Common Future' conference (UNCED, 1987). Commonly known as The Brundtland Commission, named after its Chair Gro Harlem Brundtland, it defined and popularised the definition of sustainable development as:

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

This definition has since been used to support different development arguments in economic, environmental and social contexts. The research of this thesis assumes environmental issues reside at the core of sustainable development because of the intrinsic relationship all social and economic opportunities share with the basic, yet essential, requirements for air, food and water. Therefore sustainable development is not only about maintaining current development with a consideration for later generations to continue to develop; it is also about the interdependence and integration of environmental, social and economic factors in

development. These stand out as the three pillars underpinning sustainable development, and are referred to as the triple bottom line.

The Brundtland report was fully endorsed when international delegates gathered five years later for the world conference on Environment and Development, 'The Earth Summit', held in Rio de Janeiro, Brazil. This second conference produced the Agenda 21 publication, which outlines sustainable development objectives through global partnerships (Robinson, 1992). As stated in the preamble:

> Integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own; but together we can - in a global partnership for sustainable development. (UNCED, 1992)

The integration of equality, public participation and policy making when addressing environment and development issues were also core messages of Agenda 21. It made specific recommendations in the 'Global Plan of Action' concerning the public empowerment of society, and the environment and use of natural resources, focusing on the importance of land use planning and management to achieve sustainable development. Agenda 21 calls for more equality and social justice, increased land information and management strategies particularly for planning, shelter provisions in urban settlements and advice for optimising land use. These decisions and action plans "should also reflect the needs of all sectors of the population, particularly indigenous peoples, women, local communities, low income urban dwellers and the rural poor" (Robinson, 1992). Chapter 10 and 11 re-iterate the need for an 'Integrated Approach to Land Resource Use', namely through simultaneous consideration of environmental, social and economic issues.

The progress and profile of environmental issues and sustainable development continued through the late 1980s and 1990s. Mounting evidence supported environmental predictions, international conferences and summits were popularly

attended, and political agendas seriously addressed stronger public concern. The notion of a global community became embedded, and slowly a sustainable development conscience began to perpetrate attitudes.

The three pillars of sustainable development theory now influence international agendas, and poverty reduction and development policies. In 1992 President Tarumizu of the Asian Development Bank said:

> "Asia and the Pacific has become the fastest growing region in the world. At the same time, it is still home to large numbers of the poor, the malnourished and the disadvantaged. A major challenge today is to strike a balance between economic growth and poverty reduction while at the same time protecting the environment." (Jalal, 1993)

2.3 Environment, Rural Poverty and Development Nexus

The conceptualisation of a sustainable earth and increasing impressions of globalisation slowly drew political attention to areas affecting environment and poverty. The physical capacity of the earth struggles to support the consumption, waste and activities of its 6.4 billion human inhabitants. Although efforts towards environmental protection increased, signs of decreasing biodiversity, forest depletion, worsening soil qualities, less stratospheric ozone layer and less availability of freshwater continued to be witnessed (Jalal, 1993). A fundamental understanding about the relationship between the environment and livelihoods is required to more effectively mitigate the effects of declining environmental conditions on society.

The most organised relationship that has evolved continuously over life on earth is between people and land. The ability to exploit and control land contributed to the demise of a once resource rich earth and increased disparities among global populations. The cause and effect of environmental problems and poverty are intertwined. Lack of development and poverty are identified as the root causes of some environmental problems and vice versa (Jalal, 1993). The destructive relationship between environmental degradation, rapid population

growth and stagnant production, and the spread of acute poverty is recognised in Asian countries (Jalal, 1993).

The greatest disparity in livelihoods is population distribution as poverty affects at least one fifth of the global population, three quarters whom live in rural areas (IFAD, 2001).

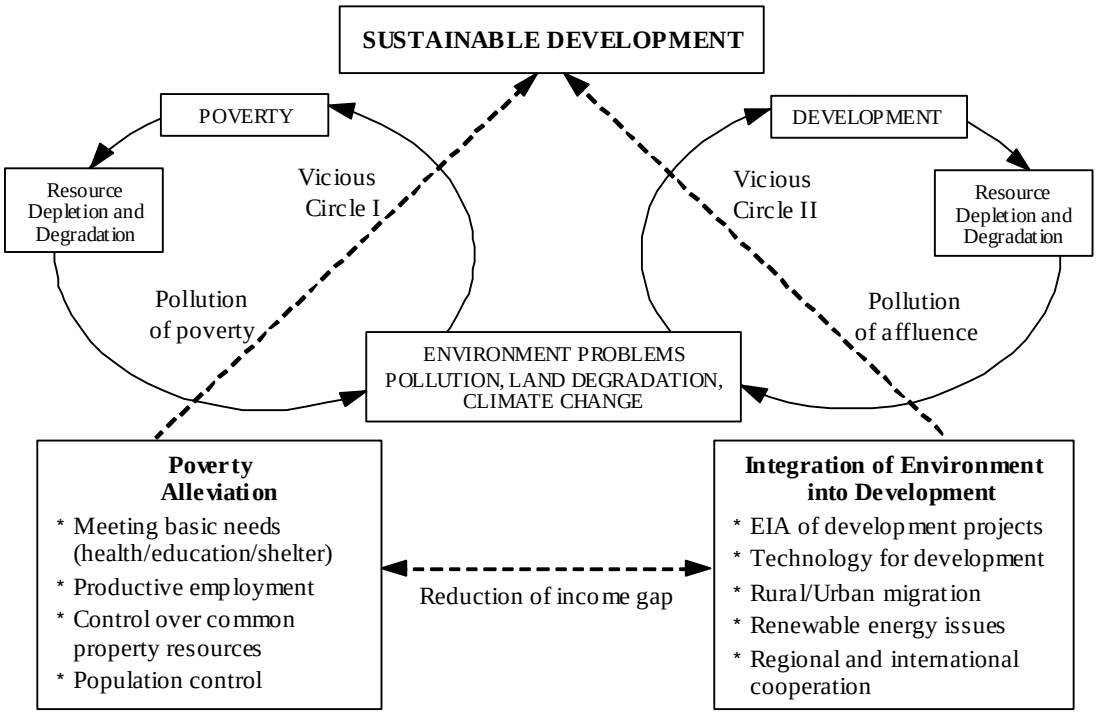
> Poverty is a multidimensional phenomenon, encompassing the inability to satisfy basic needs, lack of control over resources, lack of education and skills, poor health, malnutrition, lack of shelter, poor access to water and sanitation, vulnerability to shocks, violence and crime, lack of political freedom and voice (World Bank, 2000a).

Evidently no one factor is the cause of poverty. Poor environmental conditions have immediate and severe impacts on rural societies because land is their main asset and means to sustain a livelihood (Deininger and Feder, 1999). Secure access to and use of land and other resources remains a significant condition to prevent the onset of poverty (Deininger, 2003). The bulk of assets identified among rural villagers are products of the physical environment: water, ground cover, wild fauna/flora, soil/land, and on-farm resources (Reardon and Vosti, 1995). Skills, off-farm enterprise capital, infrastructure and social institutions are mutually enjoyed by most societies, while natural resource requirements are specific to rural villages and households. Reardon and Vosti (1995) describe the concept of 'investment poverty' (quality and quantity of the resource base) as opposed to 'welfare poverty' (measurement of income, consumption or nutrition) showing causal links between poverty and environmental degradation for rural villagers.

Global environmental problems cannot be solved without tackling poverty issues and vice versa. "They are interlinked. More than anyone else, poor people depend on the land where they live, and that makes them especially vulnerable to environmental degradation" (Runyan, 2004). The poor are also shamelessly exploited by international activities contributing to deforestation, particularly because of incentives for private companies to invest in countries offering low conservation standards (Weiner, 2003).

The appearance of poverty and the depletion of environmental resources among the rural poor are vicious and interdependent cycles as illustrated in Figure 2. Strategies for sustainable development may help to overcome these vicious cycles (Jalal, 1993). There are significant arguments supporting development through market and economic growth, while some analysts see employment as the primary solution to poverty alleviation and development. However, one cannot escape or ignore human dependence, both rural and urban, on access to land and other resources. 'Access to land allows the poor to make productive use of family labour, improve their nutritional status, smooth consumption, and improve their income and well-being' (Deininger and Feder, 1999).

Figure 2 - Linkages between Sustainable Development, Environment and Poverty



(Jalal, 1993)

To achieve sustainable development and poverty alleviation "a new set of planning criteria and approaches are necessary" (Jalal, 1993). It is therefore important to maintain the momentum and innovative responses of international development and aid delivery to the sustainable development discourse.

2.4 The Land Development Scene

2.4.1 Official Development Assistance

Foreign aid delivery and development come in many forms of economic and human sources from a wide range of providers. The majority of international cooperation programs are today executed through agencies of the United Nations (UN). The UN was officially formed in 1945 when the United Nations Charter was ratified by representatives of 50 member countries. Originally the UN was established to help with international relations, peace and security, during the Second World War. Today with 191 Member States, its numerous agencies deliver support for all aspects of people's lives around the world. The World Bank, a predominant agency in land development today, was also formed during this post war era with a mission to facilitate reconstruction. The Bank's first loan of $250 million for reconstruction was to France in 1947. A number of other institutions and agencies emerged in the decades following. The Inter-American Development Bank was established in 1959 as the first regional development institution for lending and technical cooperation programs. Soon after in 1966 the Asian Development Bank (ADB) established itself financing regionally specific assistance programs in Asia Pacific.

When making a commitment to improve society, Official Development Assistance (ODA) is employed as it concentrates on long-term sustainable assistance. Development programs may be directed at national government levels, intervening in sector programs or facilitating in grass root programs to develop human and resource capacity within communities. Different financing, loan and donor strategies are used. The quantity, duration, capacity and level of human expertise and involvement are managed differently for all projects. The agencies involved in financial, technical and human resource assistance ranges from:

- multilateral and United Nations agencies, such as the United Nations Development Program (UNDP), the UN Food and Agricultural Organisation (FAO), The World Bank, International Bank for Reconstruction and Development (IBRD) and ADB;
- bilateral agencies, such as Swedish International Development Cooperation Agency (SIDA), German Development Corporation (Deutsche Gesellschaft

fur Technische Zusammenarbeit, GTZ), United States Agency for International Development (USAID), and Australian Agency for International Development (AusAID);

- international, regional and local non-government organisations (NGOs), for example Red Cross, Oxfam Australia and Cambodian Human Rights and Development Association (ADHOC);
- as well as the increasing participation of private sector and civil society initiatives.

The ODA approach discussed in this research is just one form of foreign aid for development and poverty alleviation. It does not necessarily address immediate crises; these are typically dealt with through emergency relief aid. Neither does it address medium term issues, which are the focus of reconstruction aid efforts. It may be necessary for ODA to address some of the issues but they are not considered the primary drivers in their assistance strategies. ODA is designed to tackle much broader issues of poverty alleviation and sustainable development requiring large scale and long term solutions.

Funding is a major component of development activities. Aid funding is set through different schemes and may or may not require repayment. Aid projects are non-repayable and are a gift or donation financed from international governments through their overseas assistance agencies, such as AusAID, GTZ, SIDA.

Bank loans, a common form of project development funding, are repayable with a variable yet low interest rate depending on the project and lender. Investment loans (approximately 70-75% of the Bank's lending funds) are used to deliver long term projects of 5-10 years for poverty alleviation and sustainable development. These include projects of tenure formalisation for increased security, water and sanitation improvements, education, and post-conflict reconstruction. There is a notable shift occurring in the use of the remainder 30% of World Bank lending. Reflected in the recent name change from "Adjustment Lending" to "Development Policy Lending", there is a strong push for these smaller and short-term loans of one to two years, to be used to strengthen sector policies and improve country ownership of the programmatic operations.

Emphasis on policy-based lending is believed to better recognise individual country needs and avoids following a blue print development strategy. Policy and sectorial reforms using these short-term loans also focus on promoting competitive markets and the private sector. A Learning and Innovation Loan, is one type of Development Policy Lending. These are often used to fund pilot projects investigating the possibility of larger programs, which may require investment loans.

Funding sources and amounts are very influential in the project design. Realistic constraints on development are tied closely to the donor or lender in complex political, economic, and bureaucratic arrangements. It is necessary in this research to be mindful of such issues and constraints when devising solutions.

2.4.2 Evolving Development Strategies

In early development literature for less developed countries, foreign aid was delivered based on a strong economic paradigm and perceived only as an exogenous net increment to the capital stock of the recipient country (McAuslan, 1998). Projects of this nature, using World Bank Investment Loans, were heavily criticised as being more destructive than constructive because they were not adequately calculating the consequences and externalities involved (McAuslan, 2002). Reconstruction remained an important focus of the Bank's work given that natural disasters, humanitarian emergencies, and post-conflict rehabilitation continue to affect developing and transitional economies. However longer term intervention, higher accountability and monitoring now compel programs to deliver sustainable improvements for society's development (Kusek and Rist, 2004).

A major shift occurred in large organisations' development assistance over the past decade. While foreign aid and development programs are unavoidably tied to economic paradigms and political bias, attention to cross-disciplinary strategies involving people and environmental issues was projected to improve sustainability and effectiveness for beneficiaries (World Bank, 2004). Integrated strategies, improving partnerships and aid delivery effectiveness were also

strongly influenced by global changes in democratisation, urbanisation, information technology and communication.(World Bank, 2004).

The new cross-disciplinary approach was faced with tackling a full agenda of gender equity, corruption, HIV/AIDS, reconstruction and environmental issues. Poverty reduction was highlighted as the overarching goal, similarly requiring multidisciplinary and diverse staffing as well as close exchange and appraisal of the project environment. These issues and the management of them are being explored more holistically as a result of major organisational changes in The World Bank. Over the past two decades the Bank's role shifted from purely a lending agency to taking on a more holistic approach to development providing expert advice, knowledge and global experience in an open and transparent environment (Wolfensohn, 2005). In many international agencies there is a growing body of, and increased consultation with, experts in public policy, sector departments, and the social sciences in addition to core economic activities.

Participation of non-government organisations in development assistance during the 1990s brought significant growth in expertise, funding, and aid delivery options for development. This was highlighted with unusually high participation rates of NGOs at the United Nations 1992 *Earth Summit* in Rio de Janeiro, reflecting the conscience and rising role of civil society in sustainable development. In 1997 in New York, the *Earth Summit* +5 was held to review the progress of implementing Agenda 21's global action plan. This summit was important as it openly acknowledged the slow progress of Agenda 21's action plan and called for more pressure from NGOs to provide leadership and support in localising the implementation of the Rio accords.

Another impression of development strategies was made at the Copenhagen World Summit for Social Development, held in March 1995. This summit emphasised the need to place *people* at the centre of development, which the previous half century had clouded by economic development agendas. This summit also played an important role in an appeal for improved social justice and more civil society participation.

As a result of global summits and a call for action, The World Bank and many other agencies leading development were forced to take note and revisit their

development approach. By implementing key decentralisation strategies across the scope of the Bank's organisation and activities, a more people-orientated approach with higher project accountability and need for monitoring and evaluation was created (Kusek and Rist, 2004). Decentralisation of governance aims to transfer authority, responsibility and resources from central to intermediate and local governments (DFID, 2004). An emphasis on decentralisation also allowed closer working relationships to develop with NGO partners for in-country participation and planning. Decentralisation was enthusiastically advocated based on economic justifications of 'allocative efficiency', and a strategy for enhancing the responsiveness of policy-making and the effectiveness of poverty reduction (DFID, 2004). Taking decisions at the local level was expected to reflect local capacities and preferences, and especially take into consideration the needs of the poor. In line with these decisions UN-Habitat reported on the lack of success in land delivery and secure tenure through centralized planning and strongly encouraged participatory planning approaches (Augustinus, 2003).

Decentralisation is a parallel approach to recently accepted models for 'bottom-up' development which opposes classical top down and centralised theories. The historically conservative 'trickle-down' approach assumed that development designed at the regional and central level would infiltrate benefits down to other levels. This was not the case. These designers rarely consulted local people or their situations. Conversely, bottom-up development theory bases decisions and power close to the intended beneficiaries. It advocates for self-directed and self-generated growth and development rather than projects imposed from above (Illeris, 1993).

Current decentralisation development facilitating localised demands are being met half way by traditional centralised and overarching ideals. This approach demands policy formulation and institutional capacity building (Wolfensohn, 2005). Increasing accountability in development policy guidelines and the focus on building sound institutional infrastructures and capacity justified the continued central development approaches. A combined approach potentially supports smaller location specific projects beyond the often narrow project environment in

line with national development objectives. Capacity building at all levels is now constantly regarded as essential to improve decentralisation efficiency and strengthen institutional functions to enhance project delivery and sustainability.

2.5 Land Policy Development

2.5.1 Formulating Policy

A policy is a statement that provides a framework for the development of a course of action consistent with an organization or government's priorities and values. A policy becomes a commitment by which they are held accountable. The application of a comprehensive **land** policy is of particular interest to rural development, environmental sustainability, and harmonious social dynamics in society. A land policy is significant as land is the medium on which dynamic social relationships between different physical components, such as land, water and other natural resources, and associated rights, restrictions and responsibilities are formed.

The development paradigm over the past 30 years recently revived the emphasis on formulating strong land policies. However, greater accountability of assistance delivery, improved monitoring and evaluation of project implementation, and a reassessment of overarching policies that drive development are still required. Expanded development efforts in the 1990s revealed only small-scale improvements in poverty alleviation. New policies tend to propagate sustainable development objectives where economics did so in the past. This is supported by neoliberal reforms for poverty alleviation concluding that longer-term benefits of social cohesion, environmental sustainability and steady productivity gains, outweigh export-led growth for economic gain (Reed, 2002).

A comprehensive land policy is most pertinent when natural environment and rural poverty issues (World Bank, 2004). Keeping that in mind, land policy objectives will often be controversial and place emphasis on different priority areas depending on the country scenario (GTZ, 1998). Most often a **national land policy** will conform to having three main objectives:

- Efficiency and promotion of **economic** development,

- Equality and **social** justice and
- **Environmental** preservation and a sustainable pattern of land use (GTZ, 1998; Deininger, 2003).

It is imperative that development strategies use policies to influence decision making, such as legislative reform. Land policies must be comprehensive in terms of: listening to the people and existing situation; understanding the people to land relationship; balancing multidisciplinary issues in their economic, social and environmental contexts; and providing a realistic vision. Where sector priorities may differ, the land policy must aim to be integrated and unambiguous across departments, especially of land, environment, forestry, agriculture, water, taxation and finance.

Policy relating to land and natural resource sustainability associated with human use, access and control over resources are at the forefront of multiple development sectors (Deininger et al., 2003). Relative to these terms the German development agency, GTZ, proposed a set of land policy principles (GTZ, 1998):

- Improvement of resource allocation by defusing the land issue, especially for the benefit of small and middle size land-holders;
- Support of access to land for groups living in poverty;
- Creation of higher legal security in the transfer and use of land, especially for women;
- Design of sustainable land use patterns; and
- Demand for education and training in the field of land tenure systems and land management.

The paradigm shift in land policy from an economic focus to a balance of social, environmental and economic priorities is now recognised across all institutions dealing with national development. In terms of tenure and a commitment to social justice, the land policy increasingly recognises gender and indigenous issues by incorporating communal and traditional tenure arrangements and investigating their shortcomings. Extensions of the new policy forum can be seen in the recently drafted European Union Land Policy Guidelines (ILC, 2004b). Concentrating primarily on rural scenarios, these policy guidelines give

significant recognition to indigenous and minority groups and include options for communal ownership allowing wider cultural inclusion and traditional resource management opportunities.

2.5.2 The World Bank's Project History

A review of The World Bank 1975 Land Policy was conducted in consultation with expert consultants, researchers and international organisations at the beginning of 2000. This resulted in The World Bank publication "Land Policies for Growth and Poverty Reduction" (Deininger, 2003). This review was well overdue at The World Bank. Based on an outdated land policy, the Bank was providing finance and advice to implement development through an economic philosophy of market driven development during the 80s and early 90s. Sustainable development and environmental movement issues were poorly addressed.

During the late 1970s and early 80s The World Bank commenced the delivery of large land administration projects to bring prosperity, peace and poverty alleviation in developing countries. Project designs were implemented with an impetus on technical solutions and a rapid delivery of market options for economic growth. They focused on delivering straightforward individual private land rights as an investment incentive. However, the delivery of fundamental private or State property rights for resource management were not having the desired effects on land security investments or for sustainable development (Schlager and Ostrom, 1992). A more desirable and comprehensive land policy for poverty reduction that considered the roles of environmental, social and economic issues was required, especially given the increased international interest in sustainable development.

Important catalysts driving the Bank's policy review and new approaches in development are: the recognition of diversity and indigenous peoples' rights since the adoption of the International Labour Organisation Indigenous and Tribal Peoples Convention (No.169), 1989; international efforts to promote sustainable development following the 1987 Brundtland Report; active international support and engagement in the adoption of Agenda 21, UN Rio Earth Summit 1992 and

subsequent summits; the Copenhagen Declaration and the Programme of Action of the World Summit for Social Development empowering in civil society; advocacy for women's and children's rights demonstrated at the 4th World Conference Women's Rights, Beijing, 1995; food security and sustainable rural development incentives delivered at the World Food Summit, Rome 1996; United Nations City Summit in Istanbul, June 1996 instigating discussion that resulted in the UN-Habitat Human Settlements campaigns for adequate shelter and tenure security for all (1999); and, most recently the Millennium Development Goals (MDGs) unanimously adopted by United Nation member states in September 2000 for global human development among developing and also developed countries (World Bank, 2003a). Goal seven of the MDGs is most pertinent as it raises serious people to land issues in the targets for environmental sustainability and improvement for the lives of slum dwellers by 2020 (Table 2).

Table 2 - Millennium Development Targets Relevant to Land Policy

TARGET 9 – Integrate the principles of sustainable development into country policies and programmes and reverse the losses of environmental resources,
TARGET 10 – Halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation, and
TARGET 11 – Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers.
(World Bank, 2003a)

Of these developments, UN Habitat's Human Settlement campaigns made a significant impact on influencing land policies to better support not only secure tenure but also access to resources. Conventional ideas of secure property rights remain a high priority on the policy agenda. They remain a important trigger for increasing agricultural output, investment incentives and effort, and land marketability (Deininger and Feder, 1999; Feder et al., 1988).

Land market and land reform issues in a land policy are important ingredients in the development of financial markets and improvement in efficient allocation and access to land for the poor (Deininger and Feder, 1999). Access to improved forms of credit and transferability of land are functions stemming from the idea of land markets (Feder et al., 1988; de Soto, 2000).

A significant feature in the Bank's recent policy is the promotion of 'alternative' markets encapsulating land, labour and product market liberalisation (Deininger and Binswanger, 1999). Alternative market ideas recognise the need to build solutions within various market opportunities and acknowledge the complex framework that poverty alleviation solutions must deal with.

2.5.3 Making Policy Effective for Development

Generally policies are implemented within the formal sector and presuppose government authority and institutional controls. The reality is that the majority of people in poor and developing countries will not be affected by policy development because they operate outside formally acknowledged systems. Therefore the principle of formalisation often underpins policy formulation and development strategies. Formalisation is particularly relevant for land policy discussions as most activities in land project designs rely on formal laws, institutions and government service and operations. However it is estimated that less than 5% of property systems in developing countries are formalised (de Soto, 2000). In these countries the incorporation of informal people to land relationships within the scope of land policies is difficult and increasingly complex, especially when dealing with entrenched levels of poverty and environmental abuse.

Formalisation of informal practices is often perceived as the solution for poverty reduction and economic growth in the land and property sector. Formal property systems manage people to land relationships according to premeditated conditions and known variables of land use, value and tenure are necessary for it to function. The informal environment is not as predictable as the formal as informal land systems evolve under unique circumstances and in diverse cultural traditions. Poverty, environmental degradation, and social and economic inequality issues stemming from informal practices, are underpinned by diverse tenure arrangements. The unique and dynamic nature of informal tenurial practices as opposed to formal property rights is often poorly understood within the policy agenda and the consequences of incorporating people to land relationships in the processes of formalisation can be serious. Access to land and natural resources, and ownership and occupation issues of informal behaviour, are often poorly addressed in terms of poverty alleviation and sustainable

development. These issues of tenure arrangements and security for the rural poor are explored in Chapter 4.

Limitations to formalisation for development led UN-Habitat to go in search of alternative methods of improving urban tenure security independent of formal systems. Initial attempts using anti-eviction type strategies as an incremental tenure security approach rely on flow on effects to improve conditions of poverty. The effects witnessed include increased investments in building materials, the ability to find employment and education, and improvements to sanitation and access to water through infrastructure improvements (Augustinus, 2003). It is expected that by extending anti-eviction strategies into a rural scenario there would be similar flow on effects, including incentives to increase labour supply and agricultural investment (Deininger and Feder, 1999). These strategies, although it is premature to suggest conclusive success, appear to bridge the gap between formal and informal systems and require flexibility in policy to support the transition.

While greater flexibility in the land policy approach is required, a large question of what to do on-ground remains unsolved. Pons-Vignon (2004) makes a recommendation that '[d]onors seeking to promote peace and development should tackle land issues in recipient countries more systematically, more carefully and in a more coherent manner'. Meanwhile, implementation of the land policy discourse continues to favour familiar paths of capitalist ideas in economic growth and agricultural productivity, market and trade integration, and globalisation favouring formal property rights and land titling instruments to support these activities. This issue is addressed in Chapter 3.

2.5.4 The Urban–Rural Policy Divide

Sweeping statements on policy and development strategies are often not entirely suited at the local level, therefore an initial refinement is to treat urban and rural scenarios separately. While security of tenure is universal, policy delivery mechanisms vary among urban, peri-urban and rural landscapes. Housing and planning policy may be responsible for urban development and poverty reduction among the urban poor; regular access to fertile, irrigated land by

agricultural workers, are a priority for rural projects. In the past the rural sector was dominated by agricultural policies that did not necessarily consider tenure.

Land policies are typically formulated to support land market activities where the transferral of use rights and ownership through market functions (rental or sales) are defined by property rights systems. Property systems have the potential to empower both the rural and urban poor facing trends of globalisation (Deininger et al., 2003) and a key ingredient for this is providing tenure security for investment. Tenure security has many benefits for both the urban and rural poor and is therefore considered a major deliverable for development.

Certain conditions are necessary for an effective and functioning land market that supports productivity and equity. Importantly imperfections in labour and credit markets, and the scope of economies-of-scale in production, will affect land market functions (Deininger et al., 2003). Different modalities to address tenure issues and improve market activities are sourced through land reforms, farm restructuring, land taxation schemes, improvements to state land use planning, credit market improvements, and optimisation of land ownership and rental ceilings.

Thus far, these policy references were generally applicable to both urban and rural environments. However a closer look at urban and rural environments in developing countries reveals vastly different scenarios (Table 3). Poverty predicaments of both urban and rural societies are a function of prioritising certain factors to address immediate needs. Satisfying basic security and livelihood requirements are associated with different economic, social and environmental circumstances and therefore independent investigation of urban and rural settlements is essential.

Physical infrastructure, telecommunications, and government services that are often grossly underdeveloped in poor countries are key areas which break down urban and rural linkages and exchange (Rabinovitch, 1996). The rural landscape nurtures a variety of relationship values between people, land and other resources. These are also portrayed differently among traditional and customary groups as compared with mainstream majorities. Land and resource tenure security is important as it secures entitlements to essential benefit streams, such as food

security, through continued access to resources for food production, and social security, from inheritance patterns and collective arrangements (Maxwell and Wiebe, 1998). Alternatively shelter and employment are important survival factors for the urban poor attracting poverty reduction project funding.

Table 3 - Urban and Rural Livelihood Conditions of the Poor

SECTORS	URBAN	RURAL
Industry associated with:	Processed and manufactured goods	Primary production and unprocessed produce
Markets foster:	Service, trade and industry, and rely heavily on high employment Focus on economic progress	Land, labour and products
Government services and utility infrastructure provide:	Dense infrastructure network and generally accessible services.	Sparse and often inaccessible infrastructure that is poorly maintained with similar response to services.
Environmental issues relate to:	Air and water pollution causing health problems, not necessarily affecting food availability.	High vulnerability directly related to production and resource degradation and therefore basic food and water availability
Populations are:	Settled in more dense areas	Dispersed across a large area
Livelihoods are:	Family centric and survive by employment in service and industry	Strongly reliant on village social organisation and agrarian practices
Ideals:	Are based on market economies and commoditisation	Relate land as not being in isolation from other natural resources

(World Bank, 2000a)

Specifically most of the challenges for the rural poor are closely associated with characteristics of the physical environment in terms of self-provision dependency (World Bank, 2000a). Threatening conditions of land degradation, expropriation, population pressures, ethnic conflicts, privatisation of common property, tenure insecurities, and the expansion of commercial agriculture, give rise to an intense demand on natural resources. These factors directly impinge on land use and access for food and livelihood requirements of the rural poor (Moore, 2002). The rural poor increasingly must contend with balancing immediate survival needs and the longer-term task of environmental consciousness (Constantino-David, 1995).

While numerous factors contribute to poverty, understanding the role of the land requires an emphasis on factors that effect the protection and sustainability of people's interests in natural resources to meet their daily livelihood needs. Identification and securitisation of land and natural resources and access is imperative for survival of the rural poor. Understanding land arrangements practiced by the rural poor and providing security for these practices are prerequisites for sustainable and effective development. These mechanisms are often inadequately met in rural regions (Rauch et al., 2001). It is important that local experience and lessons are brought into decision making and policy formulation particularly for complex issues including access to land and other natural resources (ILC, 2004c).

2.5.5 Land Policy through Community Participation

A land policy is an important tool for sustainable development however broad national policies are slow to execute. In the face of deepening poverty, actualisation of policy objectives is crucial and community participation is heavily promoted as a means to enhance this development process (Craig and Mayo, 1995). Until recently, community participation was considered an alternative development path used by NGOs and volunteers, now it is considered an essential component, central to development issues and endorsed by governments and multinational aid organisations (Craig and Mayo, 1995). Effective community participation can play a major role in realising land policies at the local level.

Local community development and empowerment are democratic processes that invigorates societies so that they will act responsibly and for the benefit of their domestic environment (Maser, 1997). Studies of community development confirm livelihood improvements are gained when resource control is devolved to local communities and guarantees benefit streams (McKean, 2000). In many instances this is the only option because of the inability, inaction or inappropriate action taken by governments on land and resource management issues. Planning and development activities in developed and developing countries increasingly use community participation. This is a preferred approach for situations where decision making has localised social or environmental affects on people to land

relationships. Community participation in decision making is also useful where resources are limited and local solutions are required.

An important reciprocal benefit of this approach is its influence on policy-making in contrast to implementation. Discussion, observations and participation in decision making from the local level can reveal relationships and practices that may require deliberation at the policy level. Policy that contradicts existing practices will be difficult to implement, receive little public support and is likely to be futile.

What do grass-roots, community-based or participatory-based projects look like? They primarily target building the capacity of local people to manage their own environment and relationships, and to realise localised solutions to problems. These primarily involve the promotion of the collective intellectual capacity of the people in their environment to develop their own systematic thinking (Craig and Mayo, 1995). Assistance towards programs may be through:

- coordinating local organisational frameworks;
- establishing more efficient systems;
- providing education and up-skilling to empower local societies; and
- encouraging a sense of responsibility for members' futures.

These strategies build concepts of self sufficiency, good governance, and informed decisions making in planning and development. In Cambodia, the *Seila* national decentralisation program boasted huge success using this approach. The use of structured participatory development planning, and the implementation of community projects where local needs and priorities were identified, fostered local ownership and support (Seila Task Force, 2004). Community based strategies and a decentralisation approach also aims to avoid concentration of power in the hands of local elites who tend to marginalise poor and vulnerable groups (World Bank, 2002).

Community based natural resource management (CBNRM) schemes are now well recognised local development responses. Communities form an organisation or community council who develop a set of guidelines for the sustainable management of communally held natural resources in line with national land

policies. Democratic participation is encouraged by community members. Using local knowledge, close relationships between the immediate community and their local resources are formed. CBNRM aims to give a sense of ownership and responsibility among members where it is inferred that they will act on behalf of the greater good of the community and in trust of future generations and long term gain (Maser, 1997). However as McKean (2000) suggests "success is never a sure thing in social arrangements"; an understanding of conditions of a functional and equitable social organisation is imperative to assess whether the method will truly benefit the greater majority and not just those in authoritative positions within the group. It is also necessary to consider external factors effecting the organisation so that efforts are not undermined by, or in conflict with, government and other regimes (McKean, 2000).

Community based experiences and lessons are a necessary contribution in policy dialogue as they bridge the gap between ground realities and higher level decision making. In the rural context, community group organisation is a valuable mechanism to empower marginalised groups because many of their activities are based on communal consumption and organisation than per individual or household.

2.6 Policy and Development Issues in Southeast Asia

Development strategies affect people to land relationships according to cultural, religious, political, economic and environmental factors. Land policy formulation in developing countries must concur with specific country poverty reduction development strategies designed according to a set of economic, social and environmental priorities. Land policies are therefore unique to a country and require significant coordination to address each situation. A brief glance at regional poverty reduction strategies by the International Fund for Agricultural Development (IFAD) illustrates this diversity (Table 4).

Table 4 - IFAD Poverty Reduction Strategies

Latin America and the Caribbean's primary aims are stabilizing and increasing incomes of the target group, diversifying household income-generating activities and creating links with high-value-added activities such as small-scale agro-processing and markets outside the target community.
Near East and North Africa region endures risks in terms of decision-making and access to services because people are politically weak and are not seen as a 'profitable' segment of society. Therefore poverty reduction must improve access to new opportunities and minimize the risks that may accompany the transformation process toward entrepreneurship and creative income-generating activities.
Central and Eastern European countries facing the start of transition are experiencing deterioration in health status, education and gender equality. Poverty reduction strategies are aimed at building effective partnerships between different sectors to achieve meaningful growth in the rural economy.
Asia and the Pacific require legally secure entitlements to assets, especially land and water, and technology, particularly to increase the output and yield of staple foods; opportunities to participate in decentralized resource management; and access to markets and microfinance.

(IFAD, 2001)

Sustainable development objectives in Southeast Asia must deal with dynamic economies, increasing exploitation and poor management of environmental resources, increasing populations, mass urban migration with growing metropolises, rapidly developing industries and consequential pollution issues. At the macro-level, policies need to address the effects of globalization in the region in terms of trade, information technology, biotechnologies and the impact on agricultural production, and the effects of materialism on unique Southeast Asian cultures (IFAD, 2001). This research deals particularly with the rural poor therefore micro-level policy on these issues needs to address the following challenges of this group:

- changing unequal gender relations to increase women's ownership and control of assets, and participation in community management affairs;
- enhancing productivity of staple food in less favoured areas;
- reforming property and tenurial rights of various marginalized minorities and indigenous peoples; and
- expanding capabilities of the poor and the vulnerable through greater access to self-help, local accumulation, new skills and technologies. (IFAD, 2001)

Key policies will address issues for meeting more equitable and sustainable use of natural resources, land, forests, and aquatics. Policy issues in land management and resource protection highlighted in an ADB study concentrate on problems of:

- inadequate forestry resources and reforestation
- failure to capture rent
- lack of clear land tenure and resource rights
- inability to meet forest product demands
- population and growth impacts on land use
- socioeconomic resource pressures
- ineffective law enforcement
- deficient management of protected areas
- conflict
- unsustainable agricultural practises and
- deforestation of watersheds. (ADB, 2002)

2.6 Chapter Summary

> Sustainability has become an issue that politicians and parties are hurriedly writing into their speeches and manifestos. But none of this means very much if these words are empty; if the rallying call of 'sustainable development' is mere sloganism, the buzz word of the late twentieth century (Beckerman, 1995).

Sustainable development is truly a moral dilemma. It requires a common approach by individuals, so that benefits and trade offs are equitable for all. This is particularly difficult in capitalist societies that are individually motivated as opposed to community-minded. In many countries, particularly developed and industrialised nations, the idea of holding land or other finite resources in trust for future beneficiaries has long been challenged. An insurmountable attitude shift by influential donor organisations and project designers is required, as is the support of ideas of custodial trustees of the earth, as opposed to 'owners' (Maser, 1997). Among the rural poor, whose access and ownership of land are critical for

survival, sustainable development through community activities would appear to not be an entirely distant concept. Therefore to address rural poverty issues, land policy must be deliberately anchored in social, economic and land realities (Lavigne-Delville, 2002b).

While local factors are important considerations in development design, commitment to formalising systems and providing both physical and administrative infrastructures are also necessary to ensure long term security and widespread improvements, particularly for embedded poverty. Land administration systems attempt to provide a framework for which land policies and development strategies can be leveraged. Land administration systems are recognised as a valuable instrument for the implementation of land policy in the context of management, planning and other measures (Magel, 2003). Chapter 3 will explain how land administration theory evolved to support sustainable development in an attempt to alleviate poverty.

CHAPTER 3 – LAND ADMINISTRATION FOR SUSTAINABLE DEVELOPMENT

In most countries land accounts for between half and three quarters of national wealth.
By The World Bank 1989, pg 87

3.1 Introduction

Systems of land administration evolved as a competitive response for control over land and its potential to generate wealth. This theory of formal land administration systems stems from an economic paradigm that attempts to maximise the potential of land in society by coordinating land development, tenure, use and value. The emergence of land administration to value-add by providing tenure security, land markets and credit markets is a well established socio-economic incentive gaining much attention on national political development agendas (Binswanger, 1985; de Soto, 1993; Feder, 1999; Feder et al., 1988; Wallace and Williamson, 2005a).

Justification for and application of land administration system designs in the policy context set by the previous chapter are discussed in this chapter. Section 3.2 familiarises the reader with the dynamic land administration response to evolving people to land relationships. Section 3.3 details the common components and options for building land administration systems. Finally section 3.4 concludes by looking holistically at land administration systems in terms of project designs, cycles, regional applications and new models.

3.2 Land Administration Progress

3.2.1 Land Administration History

A national land policy endorsing sustainable development objectives is important because of the crucial role land and natural resource issues play in development. Without an operational framework, land policies have a limited role

in influencing or protecting vulnerable people to land relationships. Land administration systems are infrastructures used to address this situation. These evolved from simple inventories to institutionalised multifunctional government systems.

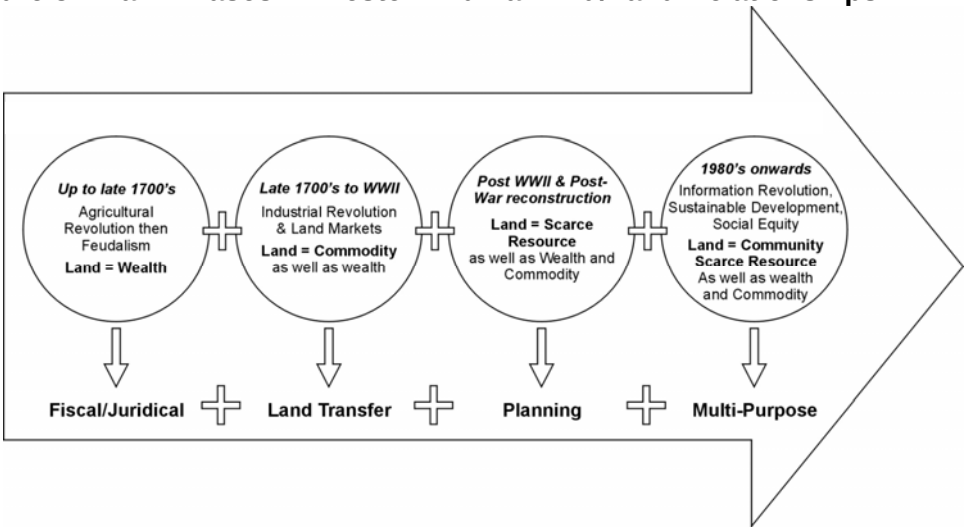
Land administration systems, or more specifically cadastral systems, are not new. Gathering and recording data about land parcels and attached ownership rights depicting early forms of cadastral systems date from as early as 8500 BC according to Powelson's (1988) recollection of formal property systems. Evidence of cadastral systems in ancient artefacts from civil societies dating back to 4500 B.C. depicted consistent scale and orientation of property ownership. These were thought to be used for the purposes of governments in tracing property ownership, taxation, and defence facilities management.

Cadastral systems are believed to have supported the early economic expansion in Western countries, namely Western Europe and Japan. This is evident in de Soto's key hypothesis on Western capitalist civilisation's triumphs: where a positive inference is made between strong institutional organisations and formal property structures in societies and their attainment of healthy economic development (de Soto, 2000). The evolution of Western people to land relationships was described by Ting (2002) as four main phases according to key revolutionary periods in society (Figure 3). The administration response of the people to land relationship during these changes in civilisation showed increasing importance of and changing capacities to, manage land for society.

Prior to feudalism, tribal society's ownership between the sovereign state and common people fluctuated dramatically from city states, to empires, only to fragment back to villager land holdings (Powelson, 1988). Property ownership was loosely synonymous with possession and settlement for agricultural use. In contrast property ownership and accumulating land during feudal times became synonymous to wealth, replacing the sense of community with privatisation. Still linked to labour, land ownership was proclaimed by the Crown until the 1500's in many monarchy ruled states. During these times there was contest against full ownership by the state, attested in the writings of John Locke (Macpherson, 1992; Raff, 2005). In the late 1600's Locke put forward the dichotomous concepts of owning property in common as well as on a private, individual basis

(Macpherson, 1992). The feudal system soon weakened under the pressure for private ownership across European states.

Figure 3 - Main Phases in Western Humankind/Land Relationships



(Ting and Williamson, 2001)

Tapping into land wealth through land taxation of private property by sovereign rulers funded military activities in the late 1700s. This required systematic registration of property ownership. The Theresian Cadastre was the first of its kind and was soon followed in the early 1800's by Napoleon. During the Napoleonic era, particular bodies were given the task of registering transfers and deeds of ownership, creating maps and cadastral records to support his fiscal strategy for empire (Ting, 2002). The modern day cadastre has continued this practice of combining land registries and maps to support government functions.

The rationale for cadastral systems was altered significantly with the onset of agricultural productivity and industrialisation. A massive land reform sweeping Europe and the United Kingdom in the 1700s, known as the Enclosure movement, consolidated inefficient parcels of feudal land into larger plots to increase productivity (Ting et al., 1998). Simultaneously the industrial revolution increased the demand for labour in urban factories drawing people out of their traditional landed relationship. Foundations were laid for land markets under land commoditisation.

The first phase of building cadastral systems met fiscal needs of land taxation; the second generation systems were designed to support legal activities to assist the operation of land markets. Examples of this can be seen during the exploration

and occupation of countries in the 1800s and 1900s by British, Portuguese, Spanish and French settlers, as systems evolved to formally allocate land to new settlers and establish the basis for land transfers. A particular type of modern cadastral system for this purpose was invented by Sir Robert Torrens and adopted across Australian and New Zealand colonies between 1857 and 1874 (Kain and Baigent, 1992). This land registration process granted State guaranteed ownership quickly and cheaply through a Certificate of Title, replacing a laborious and expensive chain of titles in the deeds system brought over by the British. The effectiveness of the Torrens system was important for supporting land market activities, and the requirement of a survey plan on title played a pivotal role in establishing cadastral mapping (Kain and Baigent, 1992). Adaptations of deeds and Torrens system principles are popularly used in registration processes in formal land administration systems around the globe.

Effective cadastral systems supporting land markets optimized land use through legal ownership transferral. Modernising land practices through technology improvements further optimized land use. Agro-economic innovations were expected to eradicate archaic practices and provide large majorities with access to new technologies with flow on effects on the economic progress of agriculturally dependent populations. However, the distribution and execution of technology was inequitable, and production and wealth distribution through land became increasingly disparate.

Post war technology and population booms intensified the use of land. Cadastral systems and associated mapping provided key information for planning activities as cities and productive areas grew. Shortly following this phase (see illustration of Figure 3) was the realisation that the high demand on natural resources could not continue. Exploitation and rapid development in society was essentially being fuelled by non-renewable natural resources. As issues of sustainable development and resource scarcity gained momentum, cadastral systems were seen as holding key information to assist in further planning, development and decision making applications. Information and communication technologies significantly reformed the operation of cadastral systems making them able to deliver more multipurpose functions and accommodate a greater range of conditions.

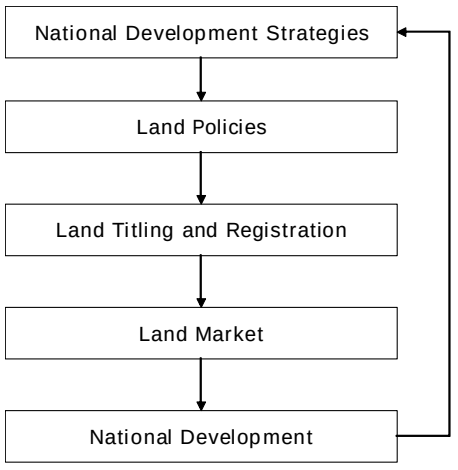
Present day cadastral and registration systems gather information to support a number of activities, including: restitution and re-allotment of interests, regulatory regimes, valuation and taxation, transaction processes, dispute prevention and resolution, parcel delimitation, and the creation and allocation of interests.

3.2.2 Land Administration Today

Trends are moving land administration away from providing legal and technical solutions to emphasising public policy development. Land administration systems, and particularly their core cadastral component, are important infrastructure facilitating the implementation of land policies in both developed and developing nations (Figure 4) (UN-FIG, 1999a). Competing and overlapping concerns in land, economics, social issues, politics and the environment require a land administration system that is able to support ever changing people to land relationships; facilitate complex decision making; and support the implementation of those decisions (Williamson et al., 2000).

The role of land administration systems in developed countries primarily supports operation of land markets, land use planning and development, land taxation, urban infrastructure and natural resource management (Williamson, 2001a).

Figure 4 - Land Policy Framework



(Dale and McLaughlin, 1999)

Today, the evolution and emergence of land administration systems today are driven by the economic and social rationale in developed and stable economies (Feder, 1999) and these systems provide elements of the social, legal, economic and technical fabric to facilitate the implementation of sustainable development (Enemark, 2003; UNECE, 1996; UN-FIG, 1999a). Developed countries are fortunate to have the necessary technical, human and institutional resource capacities.

Modern land administration systems are defined by Dale and McLaughlin as

> "…the processes of regulating land and property development and the use and conservation of the land, the gathering of revenues from the land through sales, leasing and taxation, and the resolving of conflicts concerning the ownership and use of land" and are
>
> "…those public sector activities required to support the alienation, use, valuation, and transfer of land." (Dale and McLaughlin, 1999)

The United Nations Economic Commission for Europe also developed guidelines for land administration in the late 1990s and defines it as,

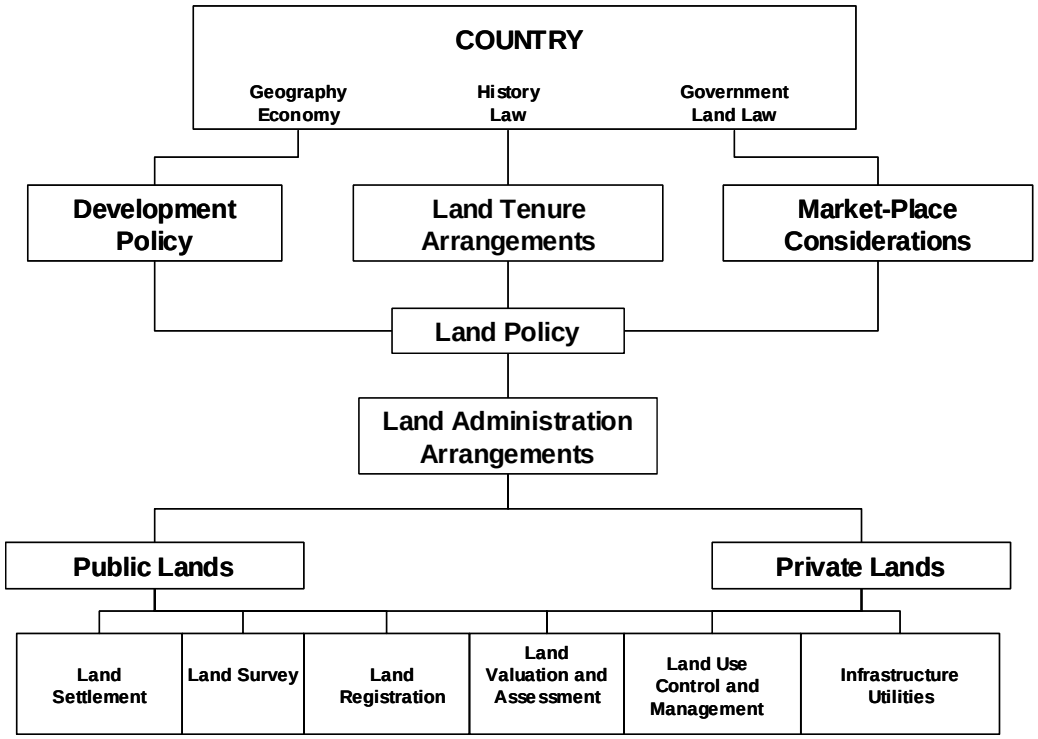
> "…the process of determining, recording and disseminating information about the tenure, value and use of land when implementing land management policies." (UNECE, 1996)

Land administration infrastructures are primarily concerned with three principle systems, each involving a number of processes:

- Land tenure – that regulates the allocation and security of rights in land; requires legal surveys to determine the parcel boundaries; enables the transfer of property or use from one party to another through sale or lease; and is concerned with the management and adjudication of doubts and disputes regarding rights and parcel boundaries.
- Land Value - assesses the value of land and properties; provides valuation for gathering revenue through taxation of land; and the management and adjudication of land valuation and taxation disputes.
- Land Use - controls land use through planning policies, regulations and enforcement; implements planning through granting permits to use and develop land according to the controls; and manages and adjudicates on land use conflicts.

Land administration systems are necessarily set in the context of a country's development. They will be shaped by cross cutting themes relevant to the issues of the country, driven by policy, which in turn affects the range of land based activities. This framework is illustrated in the Dale and McLaughlin (1998) diagram below (Figure 5).

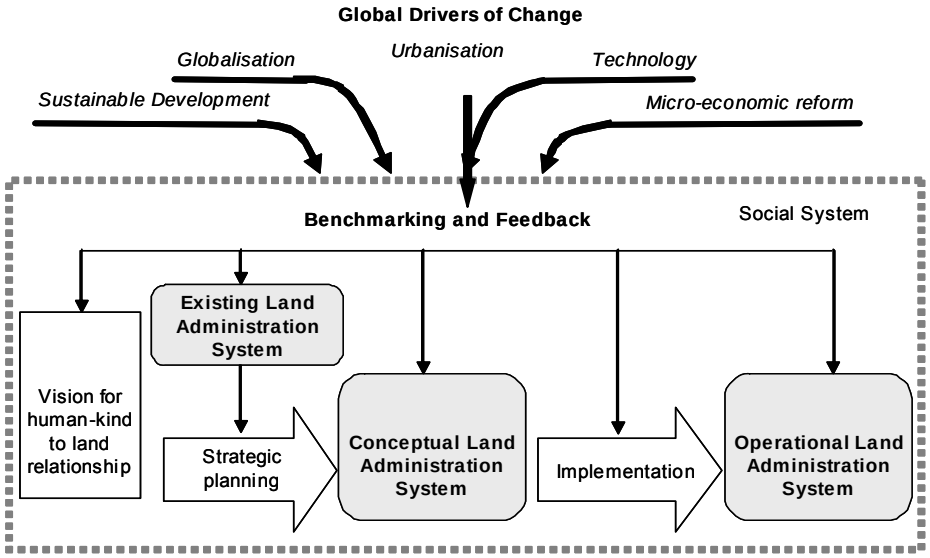
Figure 5 - Placing Land Administration in Context



(Dale and McLaughlin, 1999)

A holistic approach to land administration systems, multipurpose cadastres and the development of land information systems over the past 20 years have greatly increased the services a land administration system supports. These responded to the changes occurring in people to land relationships, influences of global and local competition, sustainable development, urbanization, globalization, economic reform and the information revolution, which demanded the re-engineering of land administration systems (Figure 6) (Williamson, 2001b).

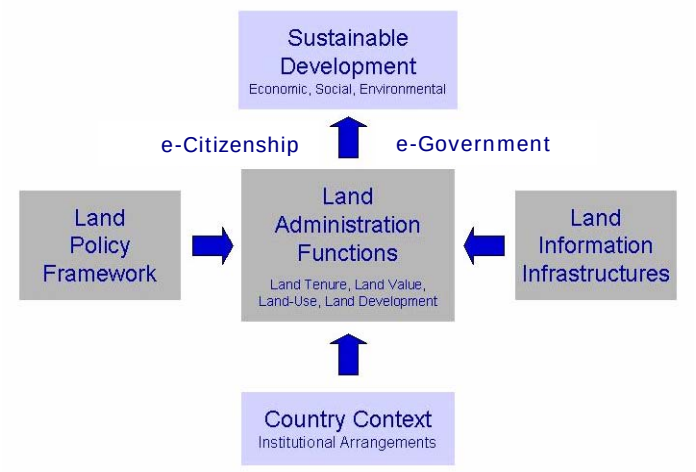
Figure 6 - Impact of Global Drivers on Re-engineering Land Administration Systems



(Williamson and Ting, 2001)

The most recent conceptualisation of land administration within society is illustrated by Figure 7 showing the importance of having a single goal towards sustainable development, understanding the country context, policy, administration and information arrangements, and utilising information and communication technologies to deliver the most effective and efficient means of information dissemination. Digital information in modern land administration systems revolutionised their capacity because of the improved ability to store and retrieve, process, transmit, and analyse land related information (Dale, 1999).

Figure 7 - Land Administration Arrangements



(Enemark et al., 2005)

3.2.3 Land Administration for Development

Leading international land agencies and organisations, particularly the International Federation of Surveyors (FIG), play an important role by addressing sustainability principles within their activity base, and organising collaborative events with development organisations. These activities resulted in important findings and contributions towards land policy and implementation for development scenarios. Pertinent statements, declarations and guidelines materialised from high level land administration, rural development and poverty reduction initiatives. These contributions include:

- United Nations Economic Commission for Europe (UNECE) Land Administration Guidelines, Meeting of Officials on Land Administration (MOLA), now the Working Party on Land Administration (WPLA), 1996;
- The UN-FIG Bogor Declaration on Cadastral Reform, United Nations Interregional Meeting of Experts on the Cadastre, Bogor, 1996;
- The UN-FIG Bathurst Declaration on Land Administration for Sustainable Development, UN-FIG Conference, Melbourne, 1999;
- The Potsdam Statement on Rural Development, Rural 21, Potsdam 2000;
- The Bonn Statement on Access to Land, Bonn 2001;
- The World Bank Regional Workshops on Land Issues in Asia, Europe, Latin America, and Africa 2002 culminating in the publication of The World Bank land policy review book, *Land Policies for Growth and Poverty Reduction*, 2003; and
- UN Habitat and UN-FIG Expert Meeting on Secure Tenures – new legal frameworks and tools, Nairobi 2004.

These initiatives emphasised the use of land administration as a key strategy in national development and poverty alleviation. Building or re-establishing land administration systems in a country presented a holistic development approach in support of sustainable development. Economic growth and poverty reduction effects from land administration activities were realised through securing property rights. The socio-economic benefits justify substantial finance, research and technical resources, training and expertise made available by multilateral and bilateral donors.

Experts remain convinced of the wealth potential of land in both developed and developing countries (de Soto, 2000; UN-FIG, 1999b; Wallace and Williamson, 2005a). This is based on the assumption that a formal property system of recording land arrangements is an indispensable tool for providing tenure security, a functioning and formal market economy, and the sustainable management of land resources (UNECE, 1996). The resolve relies on the capitalist idea of capturing a formal land market through securing land and resource interests using common tenure typologies in developing and emerging economies. A land administration system is required to coordinate and implement the functions and services. As a result, land becomes sufficiently secure to support opportunities for obtaining credit, conducting effective land transactions, providing certainty of investment, and the moderation of land disputes.

Different schools of thought have emerged that justify the popularity of designing large projects to establish land administration systems within the development sector; a number of these now provide command in land administration theories. The most common of these applied today come from the efforts of Feder (1988) and De Soto (de Soto, 1993) and their respective studies and work in Thailand and Peru.

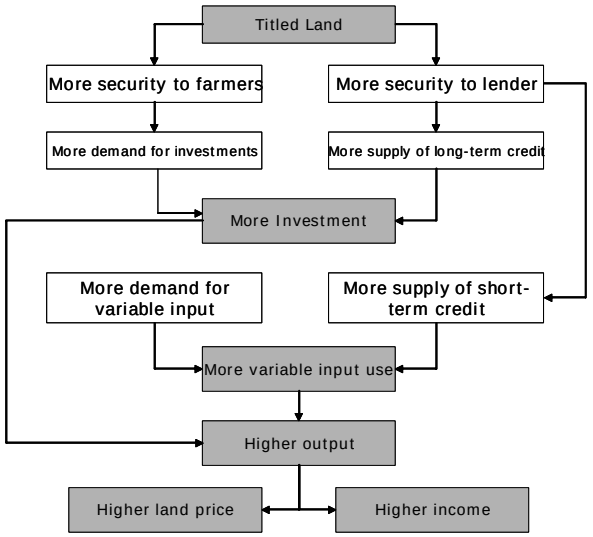
Economic Theory for Land Titling

De Soto and many other followers are convinced that a formal property system relying on ‘knowledge by description’ rather than ‘knowledge by acquaintance’ is the key to capitalist success (de Soto, 2000). The theory rests upon representation of information in the form of inscription rather than consensus: be it land tenure by certificate of title; personal identity by a passport; or a person’s credit rating via a credit card. This ability to represent information unlocks complex yet endless functionality (Wallace and Williamson, 2005a). This system relies upon a number of conditions, a complex and functioning legal system, standardisation, participation, and the ability to leverage from representation (de Soto, 2000). These attributes will raise the local and informal consensus that originally provided security, to an internationally recognised level of security. It is for these reasons of informality in property systems that de Soto argues why one billion people of the capitalist world triumph economically and more than five billion people in developing and former Soviet Union countries fail (de Soto, 2000).

The representation of tenure in the form of a land 'title' (or deed) is considered essential in a formal property system. The title allows more effective and secure means for communicating information, especially applicable when engaging in the formal land and credit markets. It is critical for these functions to be able to 'prove' not only the physical nature of the property, i.e. size, location, and use, but also the implied rights, restrictions and responsibilities attached to the land. Proving all these attributes not only secures one's land interest but strongly affects the value of land. This is where Feder's idea of title and increasing value extends (Figure 8).

Agricultural economists interested in increasing labour and productivity from land emphasise access to credit to improve farming procedures and productivity, for example to allow purchase of better seed quality, use of fertiliser, or increase of land area. A land title in this instance can be used as collateral for obtaining this credit. Figure 8 illustrates how a land title can improve investment opportunities which not only lead to increased land productivity and therefore income, but also an increase in land value.

Figure 8 - Economic Driver for Land Administration



(Feder et al., 1988)

Ownership registration and parcel identification are seen as indispensable tools in a market economy and are commonly accepted deliverables for projects in Thailand, Indonesia, Cambodia, and even Vietnam and China within their centralist administrations.

Socio-Environmental Theory for Land Titling

Issues of people to land relationship requiring development strategies are not limited to socio-economic factors. The United Nations Environment Program (UNEP) regularly unveils State of Environment statistics that reveal

environmental deterioration from the impact of human activities. Therefore land administration systems must also address environmental factors of people to land relationships. Some of these were highlighted in the Bathurst Declaration 1999:

- degradation of land due to unsustainable land use practices;
- lack of land for suitable urban development;
- lack of security of tenure (which in many societies impacts most severely on women and children);
- inequitable access to land by indigenous peoples and minority groups;
- access to land by women;
- increasing vulnerability to disaster;
- destruction of bio-diversity;
- lack of adequate planning and of effective land administration;
- tensions between environmental conservation and development; and
- impact of market forces on traditional economies and tenures.

Discussion from the Bathurst Workshop also revealed important aspects and functionality issues of land administration systems in support of sustainable development. Overall land administration systems particularly in developing and transitional countries were diagnosed as in need of re-engineering to "evolve and adapt their often inadequate and narrow focus to meet a wide range of new needs and technology, and a continually changing institutional environment" (UN-FIG, 1999b).

Acknowledging global environmental and socio-economic issues, an international appeal for good-governance, and more effective development assistance, the Bathurst Workshop provided recommendations for strengthening land policies, institutions and infrastructures within a desirable land administration system. These key recommendations were for:

- Providing effective legal security of tenure and access to property for all men and women, including indigenous peoples, those living in poverty and other disadvantaged groups;

- Promoting the land administration reforms essential for sustainable development and facilitating full and equal access for men and women to land-related economic opportunities, such as credit and natural resources;
- Investing in the necessary land administration infrastructure and in the dissemination of land information required to achieve these reforms;
- Halving the number of people around the world who do not have effective access to secure property rights in land by the Year 2010. (UN-FIG, 1999a)

In addition to these recommendations and in response to localising Agenda 21, consideration of the development context for re-engineering land administration systems was fundamental. An effective land administration system design would therefore need to recognise:

- the stage of a country's development and corresponding capacity for change;
- the range of people to land relationships and existing systems; and
- the environment for which the design is modelled is dynamic and will continue to evolve over time. (UN-FIG, 1999a)

The design of a land administration system will be unique to each country situation according to the specific objectives the projects aim to achieve. Provision of a range of options in the land administration infrastructure ensures flexibility.

> "If land administration systems do not respond and expand to meet the challenges of society's increasingly complex relationship with land, sustainable development will not move beyond rhetoric." (Williamson et al., 2000)

3.3 Land Administration Principles

3.3.1 The Toolbox Concept

As suggested, land administration infrastructures are made up of a collection of arrangements and solutions. A number of these arrangements, involving sets of principles and components, were described as a "toolbox" at the International Conference on Land Policy Reform (Williamson, 2000). Each of the toolbox principles were developed from best practice scenarios. It is intended that in the design of land administration projects a collection of tools from the toolbox are

selected to produce unique and appropriate land administration systems (Williamson, 2000).

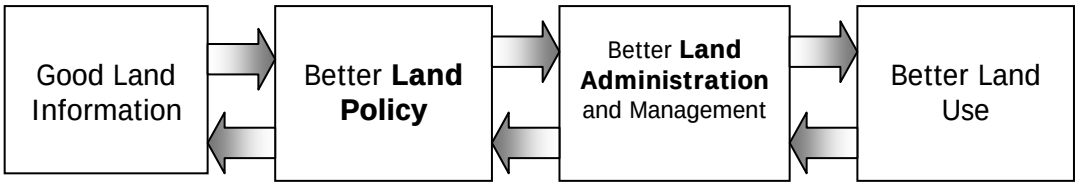
Eight principles and components evolved and are now strongly reflected in the core components of land administration project designs. These are:

- Land policy principles
- Legal principles
- Land administration and cadastral principles
- Institutional principles
- Technical principles
- Spatial data infrastructure principles
- Human resource development principles
- Land tenure principles

The role and principle of the eight land administration toolbox components are described in the following sections. These are identified to deal with problems associated for their use in projects designed for development scenarios, mostly in developing countries.

The land administration infrastructure aims to build interrelationships between these principles and components to create confidence in land tenure and serve land and property markets. Land administration components facilitate and coordinate tenure classification, recording and disseminating of land information including value, use and management information between different sets of stakeholders and guarantors. In addition to these operations in development, land administration infrastructure is complimented by the mandate to establish principles for strengthening policy, laws and the efficiency and capacity of institutions. This holistic concept supports the idea of sustainable development through the continual exchange of information and use through land policy and administration functions as illustrated in Figure 9 from the Bathurst Declaration (UN-FIG, 1999b).

Figure 9 - Bathurst Declaration for Sustainable Development



(UN-FIG, 1999b)

It is important to clarify that establishing and re-engineering a land administration and cadastral system is not equivalent to land reform. The purpose is to regulate processes for adjudicating, documenting and securing people to land relationships within an infrastructure. Land reform on the other hand, is typically concerned with land distribution and processes involved in altering patterns of land tenure and use of specified areas (Dale and McLaughlin, 1999). Specific components of a land administration design may address land reform procedures due to ownership inequalities or tenure insecurity issues.

It is difficult to benchmark or appraise their effectiveness, integrity and value in development because each land administration system responds to different needs in societies. Within a project design however evaluation is an important component for assessing and monitoring project success, accountability and justification in meeting sustainable development objectives. It is possible to benchmark performance based on operational activities, such as registration processing time, cadastral map coverage, and cost expenditure for government and also the registering owner (Steudler et al., 2004). Performance indicators may also be based on derived data by studying the status and changes in land valuation, taxation, planning and development as these activities rely on an effectively functioning the land administration system (Steudler et al., 2004). However it is difficult to find appropriate and relevant social indicators that show the affects of land administration system in the reduction of poverty. Qualitative economic and productivity indicators are easier to measure; because of numerous social and environmental externalities, these are not a realistic indicator of the success of a land administration projects despite their convenient and widespread use.

3.3.2 Land policy principles

The policy discussion in Chapter 2 indicated the importance of establishing a sound land policy that reflects national development and sustainability goals. Land policy issues are complex, country-specific, of a long-term nature, and often embrace political controversy (Deininger, 2003). Therefore policy frameworks are broad-based and aimed at harmonizing sector interests relating to land through an agreed and coordinated strategy driven by strategies promoting economic development and poverty reduction. Land policies are actualised through an array of land administration mechanisms and processes, such as laws and regulations, registration of land interests, land titling and classification options, and market arrangements.

Under the economic growth and poverty reduction themes, the Bank's new agenda strongly supports policies that address: (a) property rights to land, tenure security and its impacts; (b) the scope for accessing land, and the functioning and impact of market and non-market channels; and (c) the broader regulatory framework governing land and related sectors (Deininger, 2003).

Land policy options are selected according to the local context and range of land related issues. Often unavoidably these options are driven by political interests rather than pro-poor or sustainable development objectives. This is where policy dialogue becomes very important not only among different groups and hierarchies within a country, but also across national borders for regional land related discussions. Policy dialogue encourages the sharing of experiences but also introduces more accountability of a Government's actions within the region.

Policy consideration for secure property rights must explicitly recognise the rights of women and other groups traditionally neglected or disadvantaged (Deininger, 2003), particularly during colonisation. Action to support these rights is critical for smoothing the progress towards a democratic society, however activities must be realised within the cultural context to avoid conflicting attitudes and behaviours among citizens. This is why land policy making must reflect the country's historical evolution (Deininger, 2003).

The emphasis of securing property rights also significantly affects land market functions, productivity gains and long term investment incentives (Deininger,

2003; Feder et al., 1988). These must be closely aligned with controls associated with rentals, produce or property taxation, and transferability.

The World Bank strongly advocates strengthening land administration institutions to better define their responsibilities, to improve coverage, and to enhance financial independence (Deininger, 2003). A successful land policy within a land administration system should aim to relieve tensions between centralised and local competing government agencies whose responsibilities lie within the realm of natural environment use and management. Decentralisation through de-concentration and devolution aims to make policy dialogue more efficient by bringing it closer to the people and shifting powers and decisions away from centrally organised governments (OECD, 2001). Success remains dependent on good-governance, the ability to alter institutional organisations and the effectiveness and sustainability of capacity building in the country (Deininger, 2003).

3.3.3 Legal principles

A formal system of land administration is founded on an effective legal system. Land administration functions require certainty, enforcement and integrity to have any real effect, particularly for creating stable economic opportunity sets. A clear, reliable and unambiguous law must be established that rationalises land, property and land resource issues; it must be implemented on behalf of individuals or community interests. In particular, legal certainty provides sanctioned conflict solutions, and if necessary, a means to resolve conflicts through a courts system. These legal capacities are highly developed in a democratic state with the best intentions of providing civil society appropriate rights, in a transparent and accountable style of governance.

Legal capacities in developing countries remain the primary focus of poverty reduction strategies using rights based claims to manage people to land interests (Augustinus, 2003). International empowerment of people's rights issues and extensive rights-based ground work by UN-Habitat place greater emphasis on developing competencies in building and operating the rule of law.

In many developing countries land administration systems are destabilised by misconceived land laws and regulations. Land law reform, as a preliminary

component in building a land administration system, aims to resolve disparities and ambiguities within existing legal texts, foster greater conformity across land-based sector activities and provide a necessary legal framework from which other functions can propagate.

Ineffective legal systems create very serious problems and affect all areas of development particularly when substantial economic activities are conducted outside of the formal land system. Informality damages public confidence, increases expenditure by both the public and government, increases conflict, and typically favours the wealthy elite. This is not an easy problem to overcome given that 95% of the property sector is informal. An extensive but unmeasured part of the informal system involves autochthonous systems. Other informal activities rely on systems that evade formal processes. These systems outside formal law are often referred to as customary and informal systems. Customary practices are not necessarily illegal however in many countries they are not recognised by formal state laws or regulations and therefore receive no protection of land claims. The FIG Statement on the Cadastre emphasises the need to understand informal, traditional and customary rights in order for them to be transferred into the formal systems with a certain degree of accuracy (FIG, 1995).

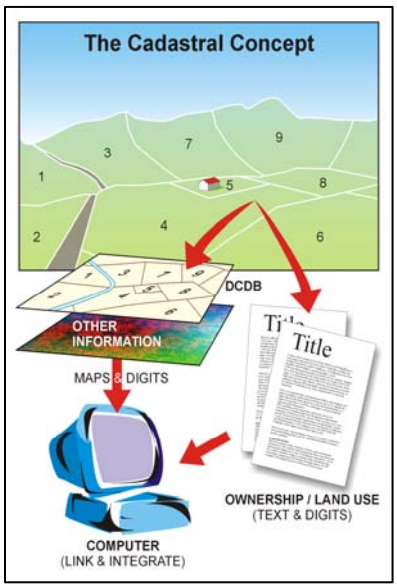
Legalisation of customary systems is not easy or even desirable in some countries. The inclusion of indigenous interests in land was recognised by the United Nations in Agenda 21 and is charged as being important for sustainable development (Williamson and Ting, 1999). A number of African and Latin American countries are slowly legitimising customary ownership. A fashion of legal duality operates in African countries where places such as Niger, Mozambique, Tanzania and Benin legally recognise customary rights (Deininger, 2003). In Brazil, Columbia, Peru and other Latin American countries where there are concentrated indigenous populations, pilot projects assisted in establishing legality for indigenous property rights (Deininger, 2003). Documentation of indigenous issues in Asia has received significantly less momentum than other regions. The Philippines recognised the importance of indigenous rights in their constitution. Land laws in the region are beginning to make allowances for customary groups as seen in the Cambodia Land Law, 2001. However on-ground recognition and true implementation of securing rights for autochthonous and

indigenous communities remains a moot point across the globe because of disparity between customary practices, legal systems imposed during colonial rule and the difficulty of integrating customary law into national law. The inherent flexibility and the specific contextual adaptations and conditions accepted within customary institutions prevent rapid integration using simple solutions and require adaptive processes allowing incremental formalisation.

3.3.4 Cadastral principles

A third and important tool for modern land administration systems is to have a core cadastre as the underpinning layer. It serves multiple purposes by storing cadastral information from mapping, surveying and registration processes within a secure database (Williamson, 2002).

Figure 10 - The Cadastral Concept



(Williamson , 2002)

As part of a land information system, stored cadastral data involves a geometric description of land parcels uniquely linked to other records describing the nature of the interests, ownership or control of those interests, and often the value of the parcel and its improvements (FIG, 1995). The cadastre is simply an inventory of land parcels described by spatial (maps) and textual (Certificates of Title) component pertaining to the owner and use interests (Figure 10). Key features and principles for an effective cadastral system are identified in Table 5.

Table 5 - Key Cadastral Features and Principles

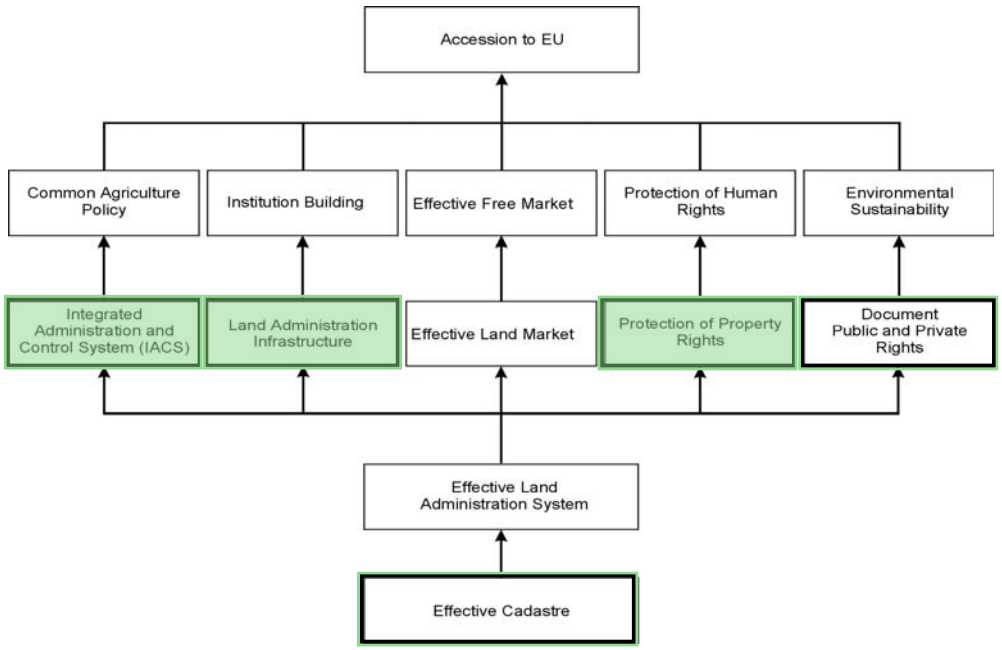
Essential Features:
- large scale maps
- relational registers
- uniquely identified parcels
- unambiguous boundaries

(FIG, 1995)

Cadastral System Principles:
- simple
- clear
- secure
- publicly accessible
- dynamic and updatable
- reliable
- low cost

The role of the cadastre is to support land information gathering particularly in support of land tenure, land value, land use and land development systems. When mandated by Government, the cadastre becomes an effective platform to support land market and administration systems for economic, environmental and social decision making purposes (Enemark and Sevatdal, 1999). When well organised, the land cadastre delivers a land information system capable of improving cadastral surveying, conveyancing, planning and environmental management activities and delivering a wide range of parcel based analyses within public and private services, infrastructure operations, as well as social and economic opportunities. A transparent and centralised database disseminated to many users reduces duplication efforts of this fundamental dataset. Cadastres demand extensive financial, human and technical resources, which are delivered through land market and taxation activities. The importance of a cadastre is recognised at the highest level, as demonstrated in Figure 11, showing it as a necessary requirement in the model for accession into the European Union (Bogaerts et al., 2002).

Figure 11 – The Role of Cadastre for Accession into the European Union



(Bogaerts et al., 2002)

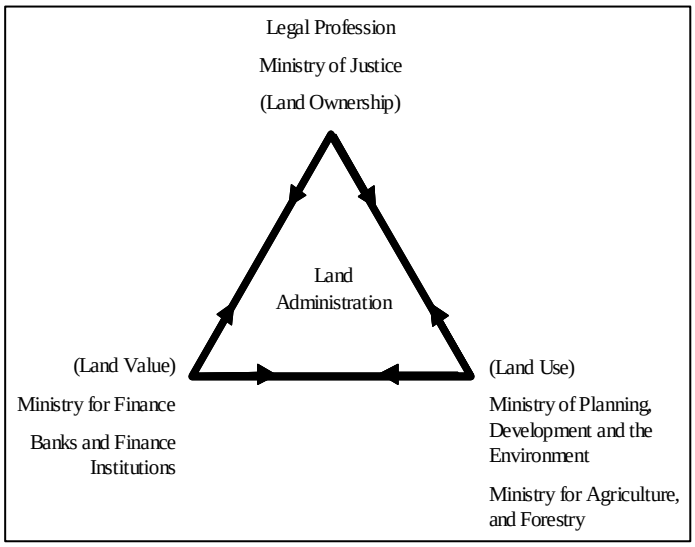
Cadastral systems are supported by sociologists, economists and surveyors. This balance in opinion favours building cadastral systems to deliver secure formal property rights (Williamson, 1997). Formalisation and titling of property rights is a serious driver for development in both the urban and rural sectors. The importance of cadastral and land information systems in support of effective land markets, urban land management and secure tenure, was clearly enunciated by The World Bank, the United Nations Development Programme (UNDP) United Nations Centre for Human Settlements (UNCHS), FAO and other authorities (Williamson, 1997). Difficulties of building sophisticated cadastres are similarly acknowledged by these institutions and field experts. What constitutes an appropriate cadastral system, from a technical, legal, institutional, administrative, economic and social perspective, for a particular country or jurisdiction at some point in time, should be the most important question (Williamson, 1997).

Technology is essential to deliver an efficient and secure cadastral system. In progressive countries with growing economies, such as the transitional eastern and central European countries, technological competence is achievable and sustainable. Highly indebted poor countries face insurmountable barriers; even raw data sets, such as parcel based information, are unavailable and technical resources and capacities are scarce (Fourie (Augustinus) and Nino-Fluck, 1999; Ezigbalike, 1996). “There is no documentary evidence of title for up to 90% of the parcels in developing countries” (UNCHS, 1991). For these countries it is important to note that a cadastre as only a subset of a national land information system, would be of more utility than the cadastre as the core framework (Fourie (Augustinus) and Nino-Fluck, 1999). Visualisation of spatial information for land management and decision making towards development and poverty alleviation is more practical, more attainable and better understood by a wider range of users (Fourie (Augustinus) and Nino-Fluck, 1999). Technical standards, information data sets and resource requirements necessary for setting up cadastral systems, are too demanding within the economic and technical expertise levels of developing countries in Africa and Asia.

3.3.5 Institutional principles

Ownership, value and use of land are three key attributes which must be managed by modern economies. Managing these attributes is often performed by separate government ministries or departments. A land administration system plays the key role in coordinating institutional arrangements among different sectors to assist in the management of land information (Figure 12). Development of the institutional framework and guiding principles for effective government and private sector functioning is also an essential tool in the toolbox.

Figure 12 - Key Institutional Sectors



(Dale and McLaughlin, 1999)

The efficiency of administering and managing resources is greatly affected by contentious political power struggles and strained institutional arrangements. This is largely because departments have long institutional histories invested in their own constituencies, professions and technical requirements (McLaughlin and Palmer, 1996). In development scenarios these relationships are further provoked due to the nature of project funding and under-resourced government budgets. These issues are notorious among development projects and are closely attached to political agendas which are beyond the scope of this research.

On a more positive note, the advent of information and communication technology and ability to gather vast amounts of land and spatial information offer technical solutions to data sharing and utility of land information. Custodianship, data sharing and maintenance issues among various institutions holding resource and mapping data are inevitable. Sharing of common data sets, functions and procedures, facilities, and staff resources are essential to reduce duplication of effort (McLaughlin and Palmer, 1996). A common recommendation is to combine public agency functions into a “one–stop shop” or by creating a lead land administration agency. A high degree of functional cooperation and coordination

is recommended between registration, cadastral surveying, mapping, valuation and planning activities (UN-FIG, 1999b). Depending on the communication and technology capacity of countries establishing land administration systems, electronic sharing, accessing and communicating data can be extremely beneficial. Indeed, without mutually beneficial institutional arrangements between data users and gathers, the use of advanced technologies is inconsequential (Williamson et al., 2003).

The integration of Ministerial responsibilities entails a high level of collaboration and sometimes restructuring of departments to build the land administration infrastructure required. This may coincide with decentralisation strategies and demands strong political will and acceptance to change. This typically requires significant levels of institutional capacity building in both human and technical resources (discussed section 3.3.7).

Another major institutional challenge involves government and private sector relationships. The land administration infrastructure is responsible for coordinating processes, but it does not necessarily have to perform them all. Outsourcing promotes good governance by reducing the power of bureaucrats (Dale and McLaughlin, 1999). Outsourcing activities of such as surveying and mapping, into the private sector is advantageous. The private sector can often execute tasks more quickly and cheaply. Outsourcing reduces the need for extensive resources within government and it encourages more business-like operations if properly assured by set professional standards. A large amount of work performed by the private sector on behalf of the government may use professional associations to uphold quality assurance and maintenance of standards in the industry or profession (Dale and McLaughlin, 1999).

For decades the IMF and The World Bank provided aid on the basis of monetarist policies, demanding governments reduce public sectors and build private sectors. This has shown to significantly facilitate and improve service delivery in developed economies. However, these policies in development are now changing (McAuslan, 2002). These institutional recommendations for encouraging private sector development are problematic in highly indebted poor countries (McAuslan, 2002). Where poverty alleviation is a high priority levels of education, technical and resource capacities and even reliable government systems

are not available. For these countries the most important principle are that institutional arrangements are made clear, lines of communication are opened and the operation of land administration services have public support and ongoing government commitment.

3.3.6 Technical principles

An extensive set of technical principles and options are available within the land administration toolbox and choosing the most appropriate and effective for projects can be debatable. During the 1950s and 60s, land administration system designs predominantly relied on advances in post war technology, such as aerial photography (Dale and McLaughlin, 1999). Land administration designers have moved away from technical options solving the design and now technical principles are acknowledged only as one component in the broad set of principles (Williamson, 2001a). They do however remain an important and budget consuming component and if applied appropriately will significantly improve the efficiency, cost effectiveness and implementation process of a land administration system and associated functions.

Developing countries with a legacy of colonisation may have traces of colonial land registration, cadastral surveying and mapping systems that are relatively expensive and unsustainable as a government responsibility or private cost upon independence (Williamson, 2000). These systems often harboured vested interests from colonising countries to maintain imposed systems and status of tenure. However, the system and its technical support must be balanced to address the needs and circumstances of the current population majority and country's resource capacity, rather than the desires of a small minority of foreign investors and elite expatriates.

Establishment of a set of appropriate technical principles facilitates standardisation during the initial data collection phase and for future system maintenance. Technical principles consider options for: cadastral mapping and surveying techniques; the introduction of information technology and computerisation; standards and accuracy of gathering spatial information; and adjudication techniques. Options of these principles are described.

Computerisation

The extent of computerisation is a major issue in a land administration system (Williamson, 2000). Information communication technology advances have transformed entire operations of developed countries and computers are now almost indispensable for every aspect of the land administration processes, even so far as using digital signatures and electronic conveyancing. The uptake of computerised technology is heavily pursued in project designs with support of The World Bank.

However introduction of computers and digital devices in developing countries raises long-term viability in the context of fiscal, technical and political commitment. Conversion of manual operations to digital systems is a substantial and costly undertaking. Extensive education and training is vital not only for application-based users, but also technical maintenance and operational staff. Integration of information technologies into large organisations requires strategic long-term planning. If not handled cautiously, computerisation may be rejected by staff unfamiliar with and fearful of operating expensive and foreign devices.

Adoption of information technology should not focus entirely on the applications. Deeper understanding is required to appreciate the extent that processes, such as data recording and registration, can be secured, simplified, made more efficient and diversified. It is important to realise the potential for expanding the data functionality for use in different applications, such as land use management and valuation for spreading costs. Sharing data that is easily electronically transferable delivers substantial advantages. Use in land registries and the automation of surveying and mapping functions allow increased data storage, an ease of updating and retrieving land record information, and back up of copies in case of disaster.

A number of limitations hamper functionality and usability of computerised data. Firstly inter-governmental arrangements may impose restrictions on data sharing, ownership, access rights, and value. Secondly there are technological limits on sharing digital information across different platforms, and data sources, and maintaining consistency and integrity of original datasets. Thirdly, advanced technologies require significant public infrastructure in terms of reliable power generation, safe and secure housing of equipment and provision of

telecommunication services. Electronic exchange of information benefits local, regional and national workplaces through local area networks and World Wide Web applications. Remote use of mobile technology to upload and download information in real time is also available in advanced systems and increasingly accessible to the most basic user. The feasibility and sustainability of employing these techniques in a development scenario require consideration. The short life span of computer aided devices before general maintenance and then additional financial injections are required to update and upgrade both software and hardware can be a major barrier. Agreements with licensing or lending organisations can be negotiated but are typically very expensive.

Cadastral surveying and mapping

Cadastral surveying relates to the gathering and recording of land parcel data directly related to the land registry details. Data collected for urban areas is large scale, 1:500, 1:1000 or 1:2500, up to 1:25,000 for rural areas. The data is concerned with geometric descriptions, especially the size, absolute location, and shape of the parcel. Land adjudication relies on this detailed and accurate cadastral survey information. The accuracy required will also depend on the physical nature of the landscape.

Cadastral mapping is involved with small scale map production generally 1:25,000 or 1:50,000, taking a holistic approach to surveying. Spatial information gathered from cadastral mapping serves a larger community of users involved in strategic planning and development. Cadastral maps are an important source of raw spatial data because they provide a spatial overview of people to land relationship. Options for using cadastral maps are increased when they are in digital form and used with a Geographic Information System (GIS). A GIS is a system of capturing, storing, checking, integrating, analysing and displaying data that has spatial attributes. A GIS allows different data sets to be overlayed, such as cadastral maps, topography, or utilities to model different spatial data relationships. GIS is an increasingly important tool used in decision making, modelling and mapping. In particular GIS can be useful in development to assist land use management and planning.

Survey Tool options

Cadastral surveying is particularly concerned with the definition of boundaries delimitating the extent of a person's interest. Boundaries may be defined using graphical or numerical survey methods, and determined by fixed, general or approximate boundaries. General boundaries observe natural features that act as the boundary, providing relatively cheap, fast, and easily identifiable boundary adjudication. They are represented on the map graphically as opposed to numerical descriptions of points and lines. Fixed boundaries are an imaginary line defined by survey using a mathematical description of the precise boundary. Approximate boundaries are where the position of the boundary has not been precisely determined although the location of the title is determined and usually shown graphically on a map. Generally these are not as precise nor as accurate as a "general" boundary.

Boundary surveys may involve specific on ground demarcation of reference points for survey coordination and referencing, or tenure security for the owner. Examples of general boundaries may be fences, ridgelines, or a water course while reference monuments may be demarcated using wooden pegs, concrete marks or steel poles. Different types of reference marks may be prescribed by official standards depending on the local situation. For example dense urban areas may leave no room for demarcation and existing walls and fences may be used, while cleared land awaiting development may require some measured reference points.

The range of technology available for surveying and mapping depends on whether the survey method is numerical or graphic. Graphical mapping methods include plane table, orthometric method, stadia, photogrammetry, unrectified photomaps, rectified photomaps, and orthophotos, and satellite imagery. Graphical methods do not require the highest precision, although this is becoming easier to obtain with the increasing refinement of image resolution. At the other end of the scale, sketch maps may be an effective tool to spatially identify people's relationships with local land and resources. Graphical methods often have functionality in the wider community for resource mapping and control, and cadastral based planning and development.

Numerical methods on the other hand are precise and include: polar methods, (theodolites, tapes, electronic distances measurements, compasses); offset methods (optical squares and tape); photogrammetry; GPS (GPS as a measuring tool as distinct from GPS as a network); orthophotomaps; digitizing; and laser or radar scanning.

The choice of the most appropriate methods requires consideration of their accuracy, simplicity, cost, efficiency, utility, flexibility and infrastructure support. Methodologies used for surveying parcels will depend on the availability of technical and human resources, accessibility of the survey area, local participation and consent, and technical support both in the field and office for processing. Multiple boundary and survey options may be used for different areas according to the specific land use, tenure security required, socio-economic situation, and land titling strategy proposed.

A choice must also be made between isolated or coordinated cadastral surveys. Isolated surveys do not required an extensive reference network, as do coordinated surveys. However, coordinated surveys allow easier adoption for maintaining consistency, completeness and integrity for cadastral mapping. Again the choice is cost, time and resource dependent.

Surveying Approaches

Land survey and titling strategies may be approached systematically or sporadically, or by combining both. Systematic adjudication and survey take place according to an organised plan so that rights to land are determined simultaneously within a pre-defined area. They are usually supply driven. Sporadic methods are piecemeal, taking place as-needed for ownership or boundary determination. This may result from an owner's request as opposed to being prescribed by authorities, i.e. they are typically demand driven. The advantages of systematic survey are the abilities to: strategically plan and coordinate survey activities including public awareness, adjudication and registration teams; strengthen the appropriate local agencies; lower individual survey costs through economy of scale (Feder, 1999); administer control; and more easily provide increased tenure security. Sporadic systems enable selective registration, reduce overall costs, require only a short term commitment, and allow survey costs to be directly imposed onto land holder.

Systematic surveying is regarded as a more efficient method for building a coordinated cadastre in areas not previously surveyed because survey and mapping results are simultaneously acquired in a logical step-wise process. Disadvantages include dependence on long term government commitment and public support, and the large investment costs financed by implementing agencies with limited immediate recuperation opportunities.

The piecemeal approach of sporadic surveying may lead to discrepancies when isolated surveys are brought into the cadastre and there are large gaps of information. There is potential for the sporadic survey approach to favour larger land holders and elites who can afford the system and therefore secure their property against small and more informal ownership of poorer citizens.

Common practice for land administration projects is to sporadically select or respond to demand in areas ready for titling and to then systematically roll out a titling program over the entire area with large publicity campaigns aiming at gaining support of the land owners. This technique was very successful in Southeast Asia, exemplified in the Thailand Land Titling Project. A key success factor for this approach was the use of information campaigns that precede surveying and adjudication teams in a community (Rattanabirabongse et al., 1998; Williams, 1999). Campaigns equally inform all concerned in the community and assist participation in the work of the adjudication team registering land claims (Feder, 1999).

Technical Option Justifications

Technology should not be an end in itself – it must serve the objectives of land administration (Williamson and Grant, 2002). Barnes and Eckel's (1996). For all but the poorest countries, review of technology innovations for land administration suggests the justification should be in terms of:

- speed (technology must significantly outperform current approaches);
- cost (technology must significantly reduce current unit survey costs);
- suitability (technology must be within the financial reach of local surveyors and within their range of skills to operate);
- appropriate accuracy (technology must match real methods);

- simplicity of field operation (the data collection must be simple enough to accommodate many different field conditions); and
- delivering longevity and system maintenance once external funding and outside expertise stops.

3.3.7 Spatial data infrastructure principles

High end land administration systems deal with a huge range of spatial data covering various sectors and servicing different end users. This creates a need to "facilitate and coordinate the exchange and sharing of spatial data between stakeholders from different jurisdictional levels in the spatial data community" (Rajabifard and Williamson, 2001). Spatial data infrastructures (SDI) provide this enabling platform. Business operations requiring land information to support sustainable development decision-making are driving the development of spatial data infrastructures.

Spatial data infrastructures are increasingly recognised for their role in facilitating data sharing and interoperability across and between hierarchies of spatial data users largely increasing the potential use of spatial information in decision making (Williamson et al., 2003).

Similar to the problems described when building a modern cadastral system in a development scenario, present day capacities and resources may be inadequate to support development of an SDI. Therefore this component of the land administration toolbox is not a priority for issues faced by the rural poor; however it would also be advantageous for immature systems to consider the application of SDI principles. These will undoubtedly be necessary for facilitating future development and increasing use of spatial information and technologies.

3.3.8 Human resource development principles

The importance of capacity building and human resource development grew during the late 1990s in response to more accountability of project effectiveness and sustainability (Enemark and Williamson, 2004; Williamson, 2000; Dale and McLaughlin, 1999). Capacity is the power of something – the power of society, institutions and individuals. For land administration, capacity building refers to increasing the strength and capabilities of institutional, technical and human

resources to help build the land administration infrastructure (Enemark and Williamson, 2004). Specifically, human resource management focuses on devising new systems or processes, reforming old ones, and recruiting, training, and educating to build human capacity.

Principles of human resource development primarily focused on building and reforming the public sector, including decentralisation processes, during the initial stages of project implementation. Capacity building and decentralisation are being integrated into the top down approaches as the value of social capital as a resource for sustainability is realised (Dale and McLaughlin, 1999). The OECD recommends aid agencies assist local capacity building by:

- giving more recognition to aid programmes strengthening local capacities with local expertise priority;
- providing more time and longer term funding for establishing participatory frameworks;
- facilitating cooperation and exchange of experiences; and
- strengthening institutional pluralism in civil society (Michel, 1995).

Important lessons can be learnt from furthering the educational and professional experience of existing employees. Exchange opportunities with similar line agencies through international workshops, conferences or international tours stimulate ideas and provide innovative solutions and experiences, as well as building a network for people with similar interests and problems.

Sustainability of the system requires a constant stream of educated and skilled people. This is best supported by building capacity through higher education and research institutions with a land administration focus (Williamson, 2000). This serves government functions and the growing private sector by developing skills in surveying, using geographic information systems and administration. A national land administration system requires capacity building across a number of institutions. This includes the finance sector if a market approach is being pursued so that a title, or alternative instrument to secure tenure, has universally recognised value within credit systems.

Previously projects tended to focus on high level positions, long term commitments and sustainability of processes. Programs that address immediate and short term training needs for technicians are now also included. These technicians are often referred to as 'barefoot' surveyors. Technical programs do not need to be very extensive; they attract people with no prior skills in surveying or land administration; they are relatively inexpensive and can rapidly address shortages of survey and registration teams while providing much needed local employment.

Human resources issues are serious in developing countries where there is low cognitive capacity due to poor education among the general population. Therefore implementation of any land administration project requires a wide range of education campaigns pitched at different levels to encourage support and participation. This will also assist sustainable delivery of land policies (Enemark and Williamson, 2004). The effectiveness of land administration systems will largely depend on appropriate solutions matching the stage of development and realistic capacity levels of the country (Enemark and Williamson, 2004).

3.3.9 Land tenure principles

As stated previously security of tenure and formalisation of property rights are key motives for designing, building and managing land administration systems. Land administration systems facilitate the delivery of access to land, shelter, and secure tenure in defined tenure systems. "Records and recognition of people to land relationships are at the basis of land tenure security and are interdependent with the social, cultural and economic conditions of the respective groups" (Burns et al., 2003).

Land tenure describes the terms of an individual or group's relationship with land. The rules of tenure define rights of use, access, control and transferability of land and property, as well as restrictions and responsibilities. Land tenures may be well defined and enforceable in formal law courts, or defined through normative and customary structures of a community.

Formal land tenure systems recognise all types of tenure in a national and/or local system of law (Bruce, 1998b). Land tenure systems underpin the degree and direction of economic development, policy making, power structures of a society,

transformation processes, and the way people relate to their natural environment (GTZ, 1998). This applies to individuals and groups across rural to urban landscapes. Secure tenure that guarantees a person's ownership or rights to land is fundamental to delivering long term development goals.

The narrow field of formal western designed tenure systems, which recognise legal rights, restrictions and responsibilities between an identified piece of land and owner, is recognised as incapable of providing all people with security of tenure. The poor need a range of formal, informal and customary, overlapping and overriding, and individual and group people to land relationships reflected in land administration responses. The effectiveness of a land administration system is now tested by the ability of its legal, technical and institutional arrangements to respond to tenure arrangements in situ.

Tenure is the most important aspect of a land administration system for poverty alleviation and particularly among the subsistence rural poor. Chapter 4 therefore analyses tenure options in detail. The following section will firstly describe the project environment for which the eight toolbox principles mentioned apply.

3.4 Land Administration Projects

3.4.1 The Nature of Land Administration Projects

For low-income countries, home to nearly 80% of all the people who live on less than $2 US dollars a day, the central objective of development assistance is to alleviate poverty (World Bank, 2000b). Land is deemed to be an underpinning factor in international development to deliver prosperity, peace and poverty alleviation (Deininger, 2003), which helps justify the one billion dollar expenditure on land projects by The World Bank in the 2004 financial year. Land for the poor is a common source of wealth and therefore people's relationship with land must be protected and where possible elevated to support the highest and best use. Insecure and ineffective access to property are seen to hinder the use of, and investment in, rural and urban land, and are detrimental to broader scale economic progress and sustainable development (Deininger, 2003; UN-FIG, 1999b).

Land administration projects evolved essentially to orchestrate two main processes: delivery of secure property rights, and the formalisation of functions in support of a land market. Land projects typically attempt to convert informal relationships with land into more secure land rights, by establishing administrative structures to ensure rights are knowable, recognized and permanent – and eventually tradeable (Wallace and Williamson, 2005a). Land titling projects designed in the early 1980s were the development solution to securing property rights; this principle commitment continues (Burns et al., 2003).

All projects are instigated at the request of the country's government and designed according to the national development goals set out in the Country's Assistance Strategy. Strategically, the mandate for projects depends on a strong political will to champion the idea and continue with project implementation.

The rights-based approach formalises private property rights through registration of title or deed records to:

- reduce land conflicts and tenure insecurity;
- improve credit security and access;
- increase asset liquidity to facilitate market growth;
- enhance incentives for productivity and resource management investment; and,
- assist government activities in taxation, planning, and service provision.

These activities in turn unlock inherent values in land that can be harnessed for improving social and economic growth (Lyons and Chandra, 2001).

The majority of projects follow generic strategies for strengthening land administration systems requiring intervention in the policy, legislative, institutional, technological and social environment of the country (Grant, 1999). Three main focuses appear repeatedly in project designs: 1) establishing a strong policy framework and institutional arrangements; 2) providing adjudication, titling and registration based on systematic or sporadic cadastral surveying and mapping; and 3) project management, monitoring and evaluation for accountability measures. All these processes are essential for initial tenure security and property formalisation and for subsequent and sustainable market development providing information for planning and coordination of land

administration functions (Dale and McLaughlin, 1999). The distribution of costs and resources among these are variable; between 10-15% are typically expended in each of the first and third components with the remaining 70-80% used for data recording activities.

Characteristics common to land administration projects include: the long term project duration; improvement of complex institutional arrangements; a high profile in both public and governments; a high social impact and secondary economic impact or vice versa; high costs and critical consequences of failure; and linkages between private, public and academic sectors (Burns, 2005). Project advisors strongly advocate for formal democratic processes, and project designs are geared towards creating capitalist economies capable of building land markets.

3.4.2 Project Cycle

Depending on the level of development, countries will identify national approaches through Poverty Reduction Strategy Papers and / or Country Assistance Strategies to boost development. The national approach provides the foundation for initiating land administration projects. The majority of projects are co-financed by The World Bank loans and by multilateral and bilateral donors. Governments consult widely to analyse the social and economic situation, and determine priorities, processes, and targets for national development.

Figure 13 – ADB Project Cycle

Source: www.adb.org

National land administration projects are often projected over a long timeframe between 10 and 25 years, with phased implementation of multiple three to five year programs. A coordinated and targeted development framework for donor agencies can be more effectively established over a three to five year period

(Deininger, 2003). These shorter term programs are devised under close consultation and set clear and specific operational, feasibility and sustainability goals that are strictly monitored and evaluated.

A typical project cycle is exemplified in Figure 13 using the Asian Development Bank model. The cycle began with an initial project identification phase by both governments and donors. Preparation involved fact-finding and project appraisal. This involved pilot studies, socio-economic assessments, feasibility studies and project advisory briefs for donor agencies. Where projects had estimated costs ranging from 20 million USD up to 250 million USD, the loan negotiation and approval was a key stage of agreements (Dale and McLaughlin, 1999). In these early phases a sound assessment was necessary to determine whether there were adequate levels of government commitment to ensure sustainability beyond the life of the project. Close consultation during the initial phase was conducted among various stakeholders including the government, civil society, beneficiaries, and other development agencies working in related sectors.

The preliminary and project analysis stages, one and two, often incurred large establishment costs, sometimes consuming up to 35% of the total project value. The second major phase of the project cycle was implementation (Stage 3) and supervision, where operation costs quickly consumed the remaining 65%. Implementation was conducted through the executing agency according to the agreed schedules and procedures, and technical advisors and consultants were used to assist governments as needed (ADB, 2005). Evaluation is the final phase that involved completion reports to evaluate and document the implementation process, experience and outcomes against original objectives. This was a significant part of the project cycle for suggesting improvements and making recommendations for the next program cycle and sharing experiences across borders. Progressive monitoring was frequently conducted.

The long term projected outcome of land administration projects was that they would eventually become a self-funded, self-governed, and self-regulated system within the country, simultaneously delivering poverty reduction and economic growth.

3.4.3 Regional Project Variances

For all the regional trends discussed below generalisations are made and the actual implementation of programs may not be accurately represented on the ground. In some cases reports of projects and progress are exceptionally positive and may not necessarily reflect the opinion of beneficiaries. Regional trends in Central and Eastern European countries since the reconstruction of former Soviet States show a bold move towards market economies. For instance in the Ukraine the legacy of Soviet style State control endures, democracy remains elusive, and endemic corruption stalls efforts at economic reform, privatization, and civil liberties (CIA, 2005). Land administration projects are relied on to manage transition by modernising registration and cadastral services, monitoring social ethnic tensions, re-instating public confidence and efficiency in the management of public resource, reorganizing land use planning and regulations to suit a market economy, de-collectivising and restructuring farms and land, and issuing deeds/titles through systematic subdivision and registration processes.

Latin American country land administration designers focus on rural land stabilisation for national growth and urban property market development. Here an emphasis on formalisation and an increase in legal security of tenure, both in urban and rural areas, aim to reduce the proportion of extra-legal activities. Similar to the European regional example, modernisation of land administration systems is viewed as assisting rapid transition to computerised parcel-based property registries and cadastres to support improved governance and land markets. Decentralisation is a key government focus to address corruption and strengthening institutions. Many countries in the region have rich but rapidly degrading natural resources and need to incorporate environmentally sustainable land use management and planning objectives. Project designs are also required to respect differing tenure security needs and options for indigenous populations.

Land administration projects in Africa reflect British, French and Portuguese colonisation as well as variable levels of political stability and dualism between customary and statutory systems. Africa has the greatest normative duality with a majority in many of its nations dependent on customary rules (Lavigne-Delville, 2002b). Successful integration of customary systems into formal land administration systems is very difficult and new innovative strategies are still

being sort (Christensen, 2005; Lemmen, 2005). The use of new technologies, particularly GIS and satellite mapping, is having mixed results in securing tenure in customary and informal settlements (Lemmen, 2005; Trinidade, 2005). Urbanisation, slum dwelling and to a large extent the effect of AIDs on a poor population require critical attention from land administration experts.

The Asia Pacific region is also highly variable in terms of designing land administration projects and it is difficult to group Asian countries with those in the Pacific. Disparities across all countries of Asia Pacific include: the physical nature of large and small land masses and archipelagos, the social, economic and political contexts of large and small populations, varying cultures and languages, economic disparities, and different stages of market integration and industrialisation. While the country context may be diverse, common threads in most Asia Pacific land administration projects share objectives to reduce poverty, promote social stability and stimulate economic development. Where possible, projects will also include a component that deals with natural resource management acknowledging the rich resources of their environments. The objectives are typically delivered through programs which aim to: to strengthen land tenure security and land markets, prevent and resolve land disputes, promote land distribution with equity, and manage land and natural resources in an equitable, sustainable and efficient manner (Deininger, 2003).

3.4.4 New Models for Land Administration Project Design

Outdated land administration strategies tended to apply identical solutions irrespective of country's circumstances (UN-FIG, 1999b). The scope of land administration project implementation now extends beyond The World Bank and involves a wide group of interested international donors, organisations and project consultant players. Sharing experiences and more transparent project evaluations exposed differences between project designs and country contexts, replacing the "one size fits all" design. Now project drivers and the local environment invariably shape the design components, duration, implementation phases, and engagement of key stakeholders and beneficiaries.

Around the globe it is better understood that societies are at different stages of development (UN-FIG, 1996); some countries aspire towards rights-based

capitalist systems to escape poverty and improve economic performance, others do not. Capitalism and formalisation of property regimes are therefore not the only options, and not necessarily the most desirable, to alleviate poverty (Wallace and Williamson, 2005a). Lavigne Delville (2002a) argues that merely changing the status of land through title registration does not necessarily ensure economic, social and environmental benefit.

Systems developed for titling and registration of property rights in urban areas are not always suitable for typically informal and oral land arrangements of rural areas. Even de Soto (2000) acknowledges that people hold and use their assets based on disconnected informal agreements where accountability is managed locally. Understanding how informal systems behave and how formal modalities can best accommodate them is an important issue for the project designer's agenda.

The World Bank acknowledges that improvements in the well being of the rural poor will only be achieved through enhanced productive, social and environmental assets (World Bank, 2005). This thinking coincides with land policies and project designs moving away from an overly technical titling focus in land administration systems. Human security, people's empowerment, gender equity and community driven development frequently appear on the development agenda closely related to land.

The endorsement of a balanced socio-economic approach and broader land policy has given rise to arguments against 'titling' as the principal tenure security solution (Deininger, 2003). The main thrust of the debate arises from a broader understanding of people to land relationships (UN-FIG, 1999a) that do not fit common Western tenure types (described in Chapter 4). Land administration system project objectives today are strongly moderated by the demographic, economic, socio-cultural and historical issues within the country. The country context is an important factor; post conflict transition, colonial legacy among a poor traditional society, a newly industrialising economy, or evolving market economy such as in post Soviet Union nations require different approaches.

Broadening the approach as encouraged by Agenda 21 requires a greater appreciation of customary and informal tenure systems operating outside the status quo (Burns et al., 2003). The four main categories of tenure are private,

public, communal and open access. However in the newer approach the classifications must remain flexible through their range: between formal and informal; fully owned, and leased or rented; private or corporate and public or state land; and minority groups and customary tenure types.

The new approach for land administration projects is required to firstly address poverty alleviation, and support the development of a market economy for sustainable development. Improved and innovative project designs are increasingly capable of improving social, gender, finance, economic and environmental sectors and focus on strengthening policies and institutions. A multidisciplinary scope, with intervention and cooperation across numerous sectors, is required for success.

3.5 Chapter Summary

Modern land administration systems can bring order and efficiency to land tenure, value, use and development systems primarily among populations who already work within a rights-based formal system. The land administration 'toolbox' concept by Williamson (2002) responded to new demands for land administration system deliverables and provides a central framework of cadastral tools through a range of appropriate land policies, legal concepts, institutional arrangements and technical solutions.

Projects are now better designed in the context of very poor countries and use much more flexible tools and approaches to secure land opportunities. The new contexts include post conflict, poor governance capacity, low technology and poor administrative competencies. The approaches show much higher respect for the existing social systems and the engagement of the local communities in efforts to formalise land and integrate their norms into formal systems.

Land administration projects however must now respond to new bolder and more pro-poor land policies for poverty alleviation. A move away from land administration projects providing individual titling solutions serving economic opportunities requires more innovative tools to implement policies (Lemmen, 2005). A range of technical, legal and institutional innovations are continually tested, however a large gap dealing with the people to land relationships and the appropriate tenure response remains. Tenure security remains the central land

administration driver, therefore as an under-researched yet imperative component of the land administration toolbox for the rural poor Chapter 4 investigates the characteristics and range of tenures.

CHAPTER 4 – LAND TENURE

"It is clear that land tenure security is a precondition to land improvement, which is in turn very crucial to the development of the highlands. This kind of land tenure security is possible only with some government recognition of ethnic customary land tenure system and ethnic participation in the control of resources, especially with common land."
(Ganjanapan, 2000)

4.1 Introduction

As a key component of land administration and land management systems, tenure requires more discussion to define appropriate, secure and sustainable options for development. Deciphering property rights and tenure complexities should ultimately influence policy making resulting in better decisions supporting the interactive use and management between land and natural resources, and people.

Therefore this chapter identifies tenure in the conventional forms of formal property, user and access rights. Tenure concepts are investigated further in informal and customary tenure concept and regimes, and resource management techniques are also investigated with an emphasis on the values of environment and social sustainability. Section 4.3 focuses on conventional tenure security justifications. Section 4.4 reveals an array of external influences affecting tenure characteristics in rural environments. Section 4.5 explores tenure formalisation approaches applied in development attempting to meet policy objectives of sustainable development and alleviating poverty.

4.2 Land Tenure Overview

4.2.1 What is Tenure?

Having an understanding of the dynamism of people and land relationships is fundamental for designers of land administration systems. Equitable, sustainable and secure tenure systems must reflect the best use of natural resources with minimal risks of conflict. A formal definition of tenure is generally accepted in the literature as 'the mode by which land is held or owned, or the set of relationships among people concerning land or its product' (Bruce, 1998). The word 'tenure' comes from Latin origin and was used to describe the holding of land in legal terms of rights and obligations of the owner (Bruce, 1998b). This relationship may be legally or customarily defined, closely controlled, or poorly defined with ambiguities open to exploitation, conflict and instability (FAO, 2002).

Conventional land tenure types describe rights to land through property regimes that have defined sets of rules and laws, referring to immovable property and real estate. Rights-based societies classify tenure typology in terms of use, value and control among groups, individuals, and the state. In these societies, land is synonymous with property, with a person or group having enforceable claims reflecting ownership. 'Ownership' will be subject to eminent domain; or the right of compulsory acquisition by the sovereign state, and incidental restrictions and obligations may be applied for public good.

An analogy of land tenure is sometimes made to a 'bundle of sticks' (Dale and McLaughlin, 1999). People hold sticks of different lengths and thicknesses illustrating the different strengths and weaknesses of people's rights over land. This 'bundle of rights' is typically defined through laws and are not necessarily exclusive. They constitute a web of intersecting interests among owners and users (FAO, 2002) and are categorised as: overriding (held by a higher authority); overlapping (several parties allocated different sets of rights over the same parcel); complementary (sharing interests in the same areas); or competing (different parties contesting similar interests of the same resource) (Dale and McLaughlin, 1999; GTZ, 1998). Often these arrangements involve partial interests that are temporally or spatially defined over the land and resources. In

rural environments partial interests may be a result of seasonal climate conditions, different stages of crop production and animal rearing.

Tenure descriptions throughout this chapter will refer to those found in the rural environment including interests in land and other natural resources, unless stated otherwise.

4.2.2 Elements of Tenure

A number of elements differentiate land tenure types in society. The first differentiating element is the method of acquisition; how the person or group came to occupy, use or possess the land. This may occur: through inheritance or gift; by physical use or occupation; or by way of formal contract from a sale, lease or rental transfer agreement. A second characteristic is the evidence of acquisition. Formal evidence may be recorded and represented by a title or deed certificate legally defining the set of rights and restrictions attached to the land. Less formal evidential documents may prove ownership, such as bills or receipts recognising the interests of a person/s to an area of land or resource (Augustinus, 2003). The evidence may be recorded through a centralised system of documentation, i.e. a land book, or held by an owner and duplicated in a registry. Traditional evidence may be physically identified, through management practices of natural resources or construction on land, or acknowledged orally among members of a community. These forms of evidence are often characteristic of informal or customary tenure. Evidence also refers to the ownership extents, or boundaries. Boundary identification is shaped by the requirements of the tenure system. Torrens cadastral systems generally allow both fixed and general boundary definitions, however where fixed boundaries are used in dense urban areas, a high degree of accuracy is required. Natural boundaries in rural areas may suffice, particularly if the boundary is described using naturally occurring features such as a stream or coastline. General boundaries remain precisely defined through legal prescriptions as do fixed boundaries. Customary systems may use territorial boundaries, which are less easily recognised to an outsider. Territorial boundaries depend on ecological boundaries, traditional definition or spiritual association to a particular area without any physical delimitation.

Two further descriptive elements of tenure are ownership and relationship. Ownership involves how the land is held among people in society. Ownership may exist as an exclusive relationship between an individual and resource area, or open to communal ownership among a group of individuals. Particularly in the Western view with respect to ownership, "[it] is generally seen as a right to do whatever one likes with the object of ownership, including destroy it" (Raff, 2005). There are four categories of ownership that Western property systems recognise, private, public, common and open access. These are described in section 4.2.4 on Property Regimes.

The idea of a 'relationship' with land is measured in terms of economic, social and environmental factors. The moral or ethical value of land to its owner separates from the fiscal value depending on the society in which the tenure system evolves. Capitalist societies are preoccupied with private individual rights of ownership, while African customary societies are more accustomed to communal arrangements. These are described in more detail in the following 'Land Concepts' section.

Four more elements describe arrangements affecting the tenure: use, duration of tenure, value and transfer. Land use varies according to labour capacity, machine and chemical technology options, economics and trade opportunities, environment and landscape conditions, and other user requirements. Use can be restricted according to planning and development outside the control of the immediate owner or occupier. In some cases where legal definitions are complex and difficult, implementation of recognised actual use regularises occupation and development of land (Dale and McLaughlin, 1999). Use rights entitle the occupier to some or all of the profits that arise from using the land. An example of this is sharecropping, a popular land distribution technique in India and other parts of South and Southeast Asia (Dale and McLaughlin, 1999).

Tenure duration terms and conditions may also be set by a sovereign authority. The duration may be defined: for the life of the owner or tenant (life estate), for an agreed period by contract or agreement according to seasons; by lineal descent (fee tail); or unlimited inheritance (fee simple). Some customary tenures have no time limitation as land is continually passed between generations. Duration of

property rights is an important component of tenure as it tends to match investment duration (Bruce and Migot-Adholla, 1994; Ward, 1997).

The value element depends on whether the people to land relationship is regarded in economic, environmental or social terms or a combination. Perceived values can become quite contentious when there is pressure and scarcity of land. The higher the value of land, socially or economically, the higher anticipation of investments. The capitalist driver and fiscal value placed on land often overshadow environmental and social interests as market based systems require land to deliver products, such as food, employment, and housing. A financially poor society, will attribute have strong social values to the land because of the livelihood security it provides, either through shelter or subsistence food crops.

Transfer of rights and interests is a condition determined by the people to land 'relationship' and the type of 'evidence' required. Ceremonies, hand shakes, documented transfers, witnesses, a legally or non-legally binding act are common transfer methods. Land values may determine if there are costs involved; duration factors may prohibit or limit transfers; and, ownership rights may inhibit how and to whom land may be transferred. In formalised systems the sale, mortgage and transfer of land to others are defined by transfer rights (FAO, 2002). Typically all the rights, restrictions and responsibilities of land are reallocated from the previous owner to the next in a transfer. Most of the elements are interdependent but help to identify the complex yet common elements of tenure that occur in most regimes.

4.2.3 Land Perceptions

Beyond rights-based tenure systems land, is perceived in a number of different ways as: territory; a resource; inheritance; having spiritual qualities; environment; and as capital. These reflect different people to land relationships adding to the dynamic and complex characteristics of tenure. Consideration of different perceptions helps explain the evolution of tenure systems and tenure security approaches for a range of societies:

- Territoriality among indigenous and nomadic groups is an expression of power or belonging across a geographic region or a natural ecological space (Grant and Neate, 1999). Individuals within this area may have special rights

and responsibilities that control their behaviour. Territoriality is placed in a similar fashion to members of the animal kingdom, where man creates the area for exclusive use (Grant and Neate, 1999).

- Land as a resource is associated with extractable products from the earth's surface, including mineral deposits, forests, water, fish, sunlight, rainfall and temperature changes (Grant and Neate, 1999).
- For many communities, land is held among the group and associated with lines of inheritance and ceremonially bequeathed during marriage, birth or death. It is a gift of cultural and survival significance shared between generations.
- Spiritual qualities of land are even more culturally infused with ancestral spirits and deity (Grant and Neate, 1999).
- The above relationships are based closely on the idea of people belonging to land, as opposed to owning rights to it. These relationships exist among traditional indigenous groups with strong group morals of stewardship, where present day use is held in trust for future generations (Crowley, 2003; Payne, 2002).
- The recognition of an ethical and intrinsic value of land in its natural state, merely as environment, is also increasing. This is distinct from land as a cultural value or a fiscal value. The significance of the non-renewable qualities of land, natural resources and ecosystems has become the object for environmental protection (Williamson et al., 2000). The principle of ecologically sustainable development, a long established principle of international customary law, was re-emphasised in the Brundtland Report. (Raff, 2005). However, to the detriment of the environment, "environmental protection legislation has been deliberately "read down" to protect private property freedoms" (Raff, 2005).
- Land is equally an asset for economic and social development, and particularly supporting land markets. Treating land as capital assumes it is a durable "free gift of nature" that has potential for value adding and can be used to raise finance by using land as collateral.

- The capitalist thinking views land as property, created through an abstract set of rights or enforceable claims. Land has the capacity for wealth generation, for attracting and locating investment, and for opening up vital opportunities for the development of the financial sector (Williamson et al., 2000).

Development of powerful economic relationships in land have to be balanced against the fact that many communities regard the "commodification" of the land as unacceptable and may not be able to support sustainable development (Williamson et al., 2000).

The importance of understanding different perceptions of land escalated when indigenous, tribal and minority groups were empowered through the adoption of the ILO Convention No.169. Raising issues of socio-economic disadvantages experienced by indigenous peoples was long overdue on the international agenda, particularly through the dispossession of indigenous peoples from their land and the exclusion for economic activity (UNHabitat and OHCHR, 2005). Australia, New Zealand, Canada, and the Philippines among others, accepted a notion of aboriginal, indigenous and native rights through court actions and even Constitutional amendments. In Australia the High court accepted evidence of spiritual linkages to land among native people. In the R v Toohey; Ex parte Meneling Station Pty Ltd case held:

> "Aboriginal ownership is primarily a spiritual affair rather than a bundle of rights, but [t]raditional Aboriginal land is not used or enjoyed only by those who have primary spiritual responsibility over it. Other Aboriginals or Aboriginal groups may have spiritual responsibility for the same land or may be entitled to exercise some usufructuary right with respect to it"
>
> (1999) 201 CLR 351 at 373, 166 ALR 258 at 269 paragraph [37] per Gleeson CJ, Gaudron, Kirby and Hayne JJ.

Differences between people to land relationships are influenced by the organisation of society, power, commodification and markets, resource dependence or independence, institutional arrangements, legal frameworks, religious and cultural beliefs, and spatial and environmental awareness.

4.2.4 Property Regimes

As with land administration systems, property regimes evolve in response to changes in society. (Macpherson, 1992). The law of property in terms of land tenure distinguishes between real and immovable property as opposed to personal, intellectual or other types of moveable property. It is important to separate the concept of property from the physical object. Property is an abstract right in or to things. Legal interests are rights in land associated with fixed objects, such as land itself, buildings and trees. Abstract rights deal with the physical nature of land to define what may be done with the property and by whom (Dale and McLaughlin, 1999). Formal property exists when rights allow a claim to some use or benefit of land or natural resource by a person and enforceable by the state through a law (Macpherson, 1992). This enforceable claim distinguishes the claim from momentary possession or occupation. The central feature of the property right for the lawyer is its capacity to deliver the land to the owners by enforcement against all others. The economist view sees the power of the owner as central. Both these views rely heavily on the fundamental idea of having a formal property system.

Most cadastral systems and property rights regimes identify tenure based on the popular Western concepts by recognising interests in land or property vested in an individual or group, which can apply separately to the land or (in rare cases) the development on it (Payne, 2002). It is this almost universal 'land as property' relationship that is institutionalised in legal, social and economic contexts.

Land as property is the foundation of formal property regimes in which typologies of tenure describe predictable rights and restrictions of interested parties. A high value is placed on credible property systems within market-economies. These predictable and secure tenure relationships provide information for land administration functions of taxation, compensation, administration of transactions, land use planning, natural resource management, risk assessment, and valuation.

Four classic tenure types evolved in Western societies recognised as: private (individual), state (public), communal and open access (Dale and McLaughlin, 1999; FAO, 2002; GTZ, 1998). Principle characteristics of tenure classification originate with the type of stakeholder/owner, whether their interests are for an individual or private person, a designated group, or on behalf of the government.

Secondly, tenure is prescribed by the degree of control or constraints imposed on the set of ownership rights.

Private and public tenures rely on a formal rights-based approach and require functioning legal and administrative systems. These tenure types predominantly populate cadastral layers within a land administration system, relating land with high economic value.

Private Property

Private property rights are the most effective bundle of legal rights and opportunities granted to individuals, households, corporations and partners, to exercise full and exclusive control over the use and management of land or resource for an unlimited duration.

In Western societies ownership is transferable, divisible, inheritable and useable as collateral. There is no risk of an owner's interest being breached without compensation. In societies that favour the rights of the individual, private ownership that is exclusive and uncontested is believed to promote incentives for the most intense and efficient use of land (Payne, 2002). Investment in the land or resource enhances its value or productivity to benefit the holder. Disincentives, such as agricultural tax, can undermine long-term tenure security or the profits of a person's benefit stream, leading to exploitive and degrading land uses and production practices.

Public Property

Public property is land held by the state and through various levels of government. It is often inalienable with highly restricted use rights. The onus of management of the property is at the government's discretion (GTZ, 1998). Tenure interests may also be divided between private state property and public state property, however not all governments will separate these. The former is managed privately by the state or a trustee on behalf of the state i.e. a lessee or state-owned enterprise. Private state property may be used for various activities with agencies exercising exclusive rights under the mandate of the state, in which case, the public does not have direct access. Conversely, public state property is managed by the State, and made available for the use and enjoyment of the general public. Land may be deliberately set aside by the State for public use with control and management allocated to a state body, or to an agency acting on

behalf of the public. Typically roadways, national parks, water reserves, and public libraries are of this tenure.

Common Property

Common property is the earliest known land arrangement and concerns multiple users in communal ownership and regulated control of land and resources (GTZ, 1998). Common property was historically held within the tribe, clan or family. Two major types are noted by Powelson (1988): nomadic, in which pastoralists migrate seasonally within territory that is traditionally theirs; and villages, in which settled agriculturalists hold land in common.

To remove ambiguities in terminology Ostuka (2001) makes the distinction between common property and communal ownership. The latter has the capacity to deliver exclusive individual user rights within a communally owned and controlled area. Under formal regimes, a governing group or body determines members and non-member interests in terms of access, exclusion and user rights in communal ownership. Under common property individuals have rights and obligations in common with all other users. Often members will incur additional restrictions and responsibilities for protection of the resource and in the long-term interest of its members (Bromley and Cernea, 1989).

Hardin's 1968 'Tragedy of the Commons' theory highlighted sustainability issues in the use and management of resources in common (Hardin, 1968). He argued that common use would cause anarchy, overuse and degrade a resource because of the human desire to extract the greatest self benefit when in competition with other users of a resource (Hardin, 1968). This theory was used to help advocate the private rights movement during the 70s. However, international research on land management and communal ownership later suggested that sustainable resource management practice depended more on the nature of user control and responsibility. Common property resource management is now considered a sustainable tenure option where there are clear incentives for people to act sustainably to secure regeneration for the next generation (GTZ, 1998). It is the combination of collective action and secure communal property rights that leads to efficient and sustainable natural resource use and management rather than exploitation and degradation (Meinzen-Dick and Di Gregorio, 2004). Common property also provides a greater sense of secure access to resources.

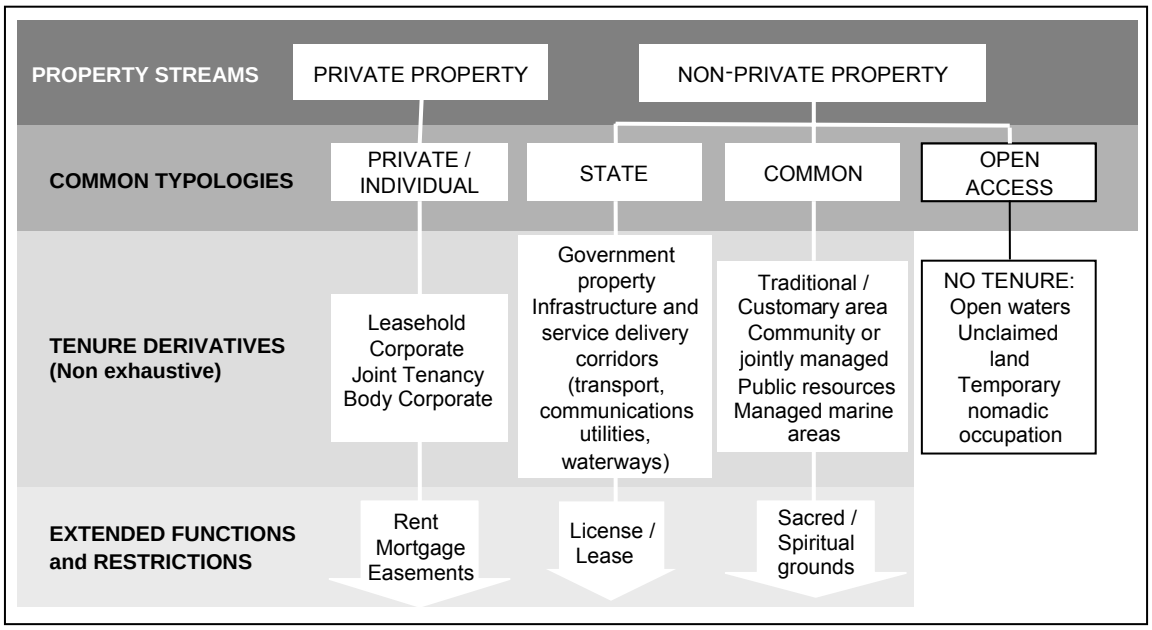
The organisation of customary societies is highly correlated to common property tenure characteristics. Customary practices have a primary interest in most, if not all the elements of natural resources as common property, such as wood, forest bi-products, and water. There are often more levels of interest than the resource alone: spiritual connections and experiences; the formation of kinship; and gender and marriage, to name a few. Customary tenure is often informal and rarely documented, however the practices are firmly grounded and shared among members of the interest group.

Open Access

The final classification is debatably a tenure type, as it refers to areas of resources that have unrestricted access and use. No rights, restrictions or responsibilities pertain to open access, thus leaving resources open to exploitation (Bromley and Cernea, 1989). There are no prescribed purposes or stakeholder's rights or duties to these areas and any person or group can appropriate benefits from the resources.

These four tenure typologies are idealistic and were generated from western culture (GTZ, 1998). The descriptions are expanded in land project literature often with a slightly different definitions (Dale and McLaughlin, 1999; Ganjanapan, 2000; Meinzen-Dick et al., 2002; Singh, 1994). They are nevertheless culturally derived and suffer from limitations of their source (Glenn, 2004). Unclassified or formally recognised property today will be a mix of tenures from colonialism and/or adaptations of customary traditions and practices. Even in developed systems classic tenure analyses do not capture all observable and evolving people to land relationships. Contract labour, share cropping and tenure arrangements of religious and non-formal categories are often overlooked. Tenure classifications are continually modified by societies to reflect local demands on land and resources. A process of adaptation in forms of tenure is illustrated in Figure 14. This diagram is not an exhaustive description of the full property spectrum; instead it attempts to show derivatives of the main tenure typologies.

Figure 14 - Truncated Tenure Typology



(Dalrymple et al., 2004)

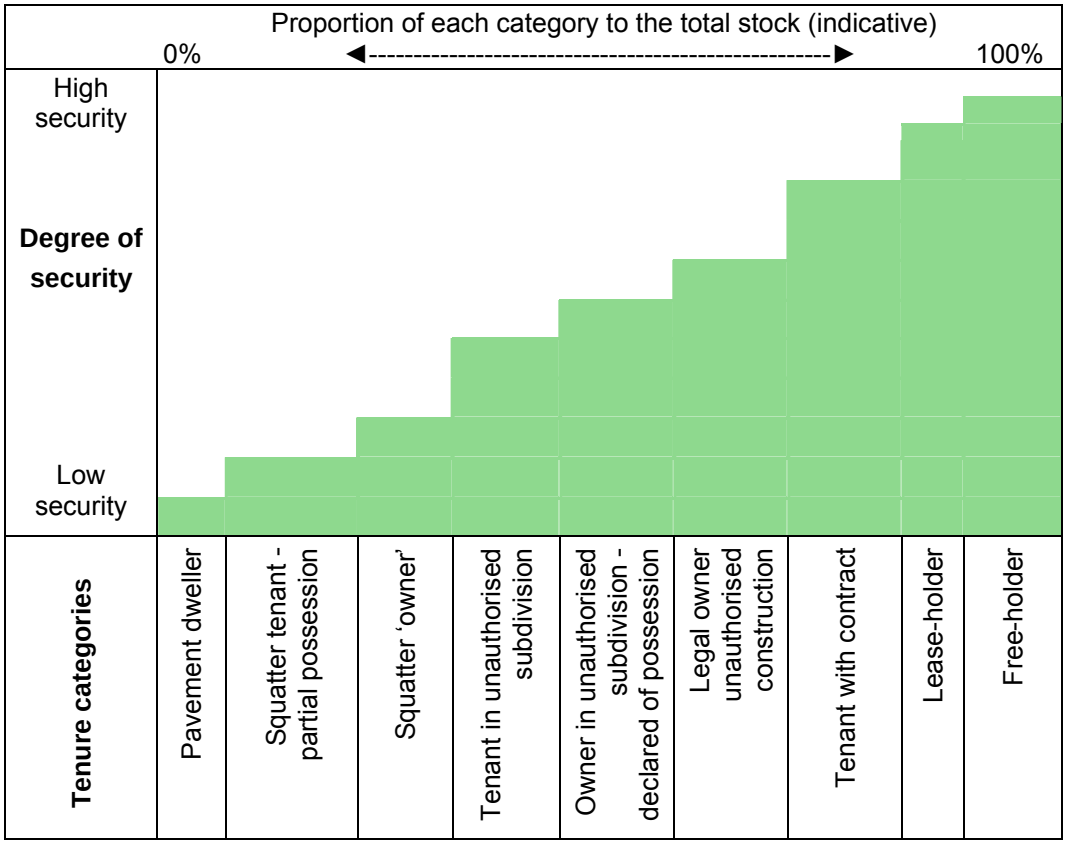
4.2.5 Informal Tenure

Figure 14 only typifies common formal tenure relationships. The diagram does not identify tenure relationships that are practised and protected outside statutory laws, classified as informal. Informal property rights lack official recognition and protection. Sometimes these are illegal, held in direct violation of the law (FAO, 2002). Informal property rights may also be extra-legal, which are not held against the law, but neither are they recognised by the law (FAO, 2002). Informal property rights may be secure in their own context, often occurring among poor and indigenous groups where they lack or disassociate from formal means to secure tenure, or have evolved according to local customs and traditions (FAO, 2002).

An important differentiation between informal and formal tenure is the degree of security and certainty of claims. Formal tenure types generally allow the owner/tenant/group to exercise their rights with a low risk of these being taken away or violated, without some form of compensation. The formal interests are explicitly acknowledged and protected by the law (Dale and McLaughlin, 1999). Informal tenure is often synonymous with insecure tenure because of the lack of formal enforcement and regulation of interests and property rights.

Informal tenure systems often derive physical and social mechanisms to defend land and resources interests. These have a varying degree of protection outside of statutory law. Payne's (2002) research of urban settlements describes tenure status on a continuum of legality from informal to formal (Table 6). In this study, legality and security of tenure show a positive linear correlation, from informal, de facto interests and perceived physical security, to fully legal, secure and State guaranteed property rights of privately titled property.

Table 6 – Amended Notional Typology of Urban Land Tenure



(Payne, 2002)

Informal tenure among the poor in rural jurisdictions will have similar variances of tenure security as shown in the urban example. There will also be a wide range of tenure categories for a culmination of resource uses for individual and communal purposes.

4.2.6 Customary Tenure

"The processes of 'globalisation' and 'development' are accompanied by a process of reaction, as efforts to expand western information more frequently

encounter other forms of information" (Glenn, 2004 pp.30). Western traditions and alternative traditions of thought and practice are increasingly considered in parallel (Glenn, 2004).

The concept of tenure associated to indigenous peoples and their land relationship is only recently acknowledged in Asia after longstanding resistance to the terminology. Other continents, such as Africa, have a long history of recognising customary and traditional tenures as opposed to and in addition to western tenure systems. Traditional tenures are defined by long term practices transcending generations. Customary tenures have similarly inherited tenure practices; they are moulded in a history of cultural or religious beliefs identifiable to particular groups, tribes, or clans (Brazenor, et al., 1999). Glenn (2004) suggest a chthontic description of customary systems is necessary, one which attempts to describe traditions internally, in spite of all problems of language and perception. Chthontic traditions can easily be used to describe the western idea of customary systems through oral traditions and informal practices as those living close and in harmony with the land without degradation (Glenn, 2004). The downfall of chthontic or customary traditions lies in the internalisation of the system. They may be highly flexible, however Glenn (2004) suggests they were never highly structured and therefore struggled to resist westernisation and external influences.

Land may be a common denominator among tenure systems but customary tenure is deeply rooted in traditional practices very distinct from formal tenures such as private property. Communal tenure in a customary system acknowledges informal management arrangements of individual and group rights within a common area. The people to land relationship may be based on tradition, spiritual connections, resource availability or kinship. Acquisition of rights to land or resources among the group is prescribed by permission and invitations, self-restraints and implications, rather than through prescribed and formalised rights bounded by legal principles and institutional arrangements. Lines on maps often do not define boundary demarcation; instead close connections and boundary demarcations originate from tribal, geographic or ecological boundaries (Hirsch, et al., 1995). These tenures are not easily translated into formal tenure systems.

Management practices under customary tenures were given a raised profile by their sustainable development focus. Both positive and negative views on

customary approaches have emerged. “In Asian states land and natural resources are considered alienable, therefore communal tenures have been prone to mismanagement owing to a lack of clarity regarding who makes decisions in the name of the larger group” (Colchester, 2004). Often pressures from external groups effect the management and development of indigenous groups causing land degradation, fragmentation, decreased food security, impoverishment and cultural loss (Griffiths, 2004) as opposed to poor management by the group. These situations reflect badly on local customary land management and therefore governments are reluctant to recognise rights of tenure in community-based natural resource management regimes (Colchester, 2004).

Positive appraisals are just as evident. Indigenous knowledge and traditions are acknowledged as important in achieving sustainable development, and identified specifically in Principle 22 of the Rio Declaration on the Environment and Development (United Nations, 1992):

> Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. State should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

In an analysis of the Earth Summit goals, Cicin-Sain and Knecht (1995) provided the following recommendations for governments to implement:

- Recognition of the special values, cultural practices, and knowledge of indigenous peoples.
- Integration of traditional knowledge and practices of indigenous peoples into contemporary management systems.
- Involvement of indigenous peoples in decisions about their environment and development.
- Targeting of specific initiatives relevant to indigenous peoples, such as dealing with land tenure issues.
- Capacity building amongst governments dealing with indigenous issues, especially through the training of government staff.

However implementation of these recommendations is difficult. The vast diversity of 'indigenous peoples', their self-governance, and locally autonomous systems of land administration prevent generalist approaches to land tenure characteristics. Evaluation of the sustainability of informal indigenous tenures with conservationalist ideals against formal tenure systems which have a typically strong economic rationale is difficult. Achieving security for these societies is at the heart of customary land issues – in terms of access to land and resources, institutional recognition and self-sufficiency – before considering increased access to markets and trade (Colchester, 1992). Attempts in a number of jurisdictions, such as Ecuador, New Zealand, Malyasia, and Namibia, to integrate customary systems into formal systems have been very complex and problematic. Legal, political, institutional, and technical solutions are continually being trialled.

4.3 Importance of Tenure Security

Informal and insecure tenure is believed to be a major factor contributing to poverty as a result of unsustainable land use, poor allocation of services, limited access to shelter, and poor investment and access to credit (Feder and Nishio, 1998; Payne, 2002). Increasing tenure security is a key driver in development strategies, especially through land administration projects as an attempt to provide long-term certainty of poor people's most valuable asset. Tenure security exists when people can successfully defend their interest in land, when challenged. For the poor, tenure security includes protection against risks particularly eviction and not living in fear or threat of having their claims denied or unjustly compensated (Augustinus, 2003).

Socioeconomic development is said to increase with the elimination of tenure insecurity to enhance investment and reduce efforts spent on protecting the possession and occupation of resources (GTZ, 1998). It leads to other processes and issues vital to sustainable shelter delivery and upgrading (Cobbett, 2000). There is also evidence that long-term security encourages better resource management decisions (Feder et al., 1988; Otsuka and Place, 2001). Nonetheless, tenure security is imperative for civil peace, equity and food security (Lavigne-Delville, 2002b).

UN-Habitat revealed that insecure land tenure:

- inhibits investment in housing;
- hinders good governance;
- promotes social exclusion;
- undermines long-term planning;
- distorts prices of land and services;
- reinforces poverty and social exclusion; and
- impacts most negatively on women and children (Cobbett, 2000).

UN-Habitat recognised the catalytic effect of urban tenure security in their shelter strategy to encourage governments' commitment to the '*Adequate shelter for all'* campaign of Agenda 21. Much of the Habitat discussion is founded on having the right to security of tenure as a fundamental element of the human right to adequate housing (Benschop and Trujillo, 2000).

Methods of delivering tenure security vary depending on the urban, rural or peri-urban context. Deininger (2003) emphasised elements of tenure security as the duration of rights, boundary identification, subject of rights, properties of enforcement institutions, and the rights and responsiveness to changing circumstances, especially economic, political and resource valuation. Payne's idea of urban tenure security, as shown in Table 6, emphasised the degree of housing and construction legality.

Traditional economic and legal analysis of security of tenure focuses on property rights providing:

- excludability, to allow those with rights to exclude others use of a particular resource;
- duration, to provide sufficient time to reap the benefits of investments;
- assurance, from institutions that can enforce an individual's rights;
- transferability, for credit, investment and inheritance advantages, temporarily or permanently;
- property identification, to accurately define boundaries, and;

- robustness, the number and strength of the 'bundle of rights' (legitimate uses and benefits that can be made and gained from land) an individual possesses (Meinzen-Dick and Knox, 1999).

For lawyers, economists and planners the provision of secure tenure through ownership, namely private or freehold, in urban scenarios allows land market to:

- provide households with an asset;
- provide opportunities in the land market through a transferable asset;
- provide conditions for development of communities as residents with sense of ownership;
- foster better living conditions, a better environment and improve personal security; and
- remove the possibility of arbitrary eviction (Alder, 2000).

Similar arguments are made for formalising tenure using private title in rural areas where there is a stronger focus on land use and productivity as opposed to off-farm employment opportunities are:

- greater incentive for farmers to manage their land and other natural resources more sustainably;
- greater incentive to make labour intensive and capital investments in their property;
- reduction of land disputes;
- provision of collateral for credit leading to increased productivity and therefore income;
- improvement in transferability to more productive users through a land market;
- increase in land value; and
- support for physical planning in rural development infrastructure programs. (Dale and McLaughlin, 1999; Deininger and van den Brink, 2002; Feder and Feeny, 1991)

These examples promote the idea that formalisation of private tenure is necessary for tenure security. However local contexts often provide intermediate solutions to tenure security and, Payne’s research emphasises that an analysis of

tenure security does not advance by use of a dichotomy between the formal having security and the informal having none.

Identification, classification and securitisation of rights under a private tenure system are common land administration solutions to formalise access to land and investment incentives. However land administration alone cannot deliver tenure security. To achieve the desired results a number of fundamental conditions need to be simultaneously met. These include:

- functional certainty and security of the law and human rights;
- public participation in the politics of land issues;
- credit systems that acknowledge secured tenure for collateral;
- functional and accountable institutions and authority;
- improved employment and business investment opportunities; and
- a functioning land market and economy (GTZ, 1998; de Soto, 2000).

On-ground implementation issues of land titling to secure tenure remain. Formal titling requires efficient and reliable methods of recording land ownership, cadastral systems, administrative mechanisms, and the capacity to record and update property rights (Cobbett, 2000).

Land administration projects in Southeast Asia predominantly concentrate on delivering security of tenure to privately held land through simple and unambiguous title registration. While some projects, including Thailand and those of de Soto's in Peru and Bolivia (de Soto, 2000) achieved acclaimed success, land titling does not work in all development scenarios and does not necessarily impact positively on the poor (Gilbert, 2002). Private titling assumes rigid people to land relationships not always found among rural poor, particularly the subsistence farmers. The following section discusses these issues and the final section looks at other tenure formalisation strategies.

4.4 Tenure Issues of the Poor

4.4.1 Urban and Rural Divide

Tenure security can act as a catalyst to assist poverty reduction and sustainable development strategies if the design of the instruments is sensitive to social issues and the side effects of formalisation. Social and environmental issues among the

rural poor that affect design are acknowledged here as women's rights, communal resource management, access and resource tenure, and food security. Additionally because the rural poor experience socio-environmental issues in unique and interdependent ways, they require tailored solutions. The separation of urban and rural environments is generally accepted in the land industry (Lemmen, 2005).

Formal tenure exists in rural and urban environments. In a formal, developed and legally secure environment, tenure arrangements are more easily integrated across both urban and rural areas and societies, utilising a range of typologies in the tenure systems. For example, often large farms continue to be owned by the government and tenants are granted time delimited leasehold agreements, with use-rights similar to those held under a freehold title. Countries with developed, formal market economies and established land registries are able to provide reliable, secure and easy access to services and professionals within the industry allowing people in all areas to take advantage of activities in the land market. This requires coordinated and tightly regulated processes between a range of practitioners, government departments and industry sectors. Information communication technology and high human resource capacities play significant roles in supporting the efficiency of market processes smoothing the divide between urban and rural environments.

However significant differences between urban and rural environments in developing countries affect the value and concepts of land, tenure and security measures. As suggested in Chapter 2, market environments, industry priorities, and employment and labour prospects differ widely between the urban and rural environment. Physical and administrative infrastructures are typically inadequate in the rural sector. Investigation of societies living in urban poverty as compared with rural poverty exposes large differences in tenure arrangements particularly the treatment of informal tenures. Therefore poor rural societies wanting to satisfy basic security and livelihood needs require diverse and innovative solutions for the delivery of secure tenure.

Understanding all the dimensions and interconnected problems associated with poverty ideally requires unique solutions to each situation. Some basic distinctions between urban and rural poverty characteristics were made in Table 3,

section 2.5.4 by looking at economic activities, demographics, physical access and environmental risks (World Bank, 2000a).

Improvement of informal urban settlement conditions is a major international development priority in response to urban migration trends. Target 11 of the Millennium Development Goals identifies a significant improvement in the lives of at least 100 million slum dwellers by 2020 (World Bank, 2003a). UN-Habitat are committed to this target through the secure tenure campaign stating that 'security of tenure is one of the most important catalysts for attracting large scale capital necessary for comprehensive slum-upgrading' and self-investment (Augustinus, 2003). Urban tenure security focuses attempts to alleviate poverty by providing and protecting access to land and shelter, and mainstreaming social, economic and civic opportunities (Augustinus, 2003). Urban tenure security will be closely aligned with priorities in planning and housing policies, particularly those targeting informal settlements. More recently this housing rights agenda has expanded to specifically include indigenous peoples' rights (UN-Habitat, 2005).

In the scope of this thesis it does not address issues that affect the dynamic urban rural interface. This interface, referred to as peri-urban or urban fringe, continually transforms rural land uses in response to the demand to expand urban centres. The complications of land use conversion and intensification, changing land values, intensification of infrastructure, planning restrictions, environmental impacts and assignment of new tenure status are predominant issues at this interface (Mattingly, 1996). This interface requires management of an inevitable impact between traditional farming practices and production and the desires and demands of progressive market economies and urbanising societies.

There are important natural resource factors intrinsic to rural societies that contradict the urban scenario. These particularly affect tenure security and are poignantly summarised by the following statement.

> For the rural poor, secure access to land and fair employment practices in agriculture provide the most realistic opportunities to improve their livelihoods and develop assets that can reduce vulnerability. Secure access to land and control over its management provide the most powerful incentive for the sustainable management of natural resources (ILC, 2004c).

The need for differential treatment of tenure in each environment in the context of major issues is highlighted in the next sections.

4.4.2 Women and Tenure

Gender plays a crucial role in shaping social groups and has a strong cause and effect relationship on poverty (Home, 2005). All around the globe, women do not have the same rights as men, and rural women especially are among the poorest and most disadvantaged groups (Ekaas et al., 2004). Discrimination is reflected in inequitable access to resources especially land, technology and social services. Women in many societies also suffer from a lack of empowerment and participation in decision making. Land rights for women are also necessary to secure basic benefit streams such as food and education (Carter, 2003). The role of women to provide the essential requirements for a family to avoid poverty, is a direct and indirect result of tenure status.

Women play a key role in family units, especially among the rural poor, spending many hours caring for the wellbeing of their family and their assets. Often day to day decisions about land or property are made by the female because the husband or male head is absent, working in the field or at other employment. The primary role of the woman is often acknowledged only as a de facto relationship without entitlement to property rights. A woman's right is indirectly defined through the male, in her role as wife, daughter, or sister (GTZ, 1998). In Brazil and Vietnam, although laws state equal rights to legal registration of title for both men and women, less than 15% are held by women in both cases (Ekaas et al., 2004). The strength of social coherence and practice as demonstrated by these statistics is often far stronger than the legal infrastructure; especially where maintenance of social consensus outweighs any findings in court and might lead to social exclusion or disapproval (Ekaas et al., 2004). Another example of this is in Cameroon where the constitution enshrines principles of gender equality, yet socio-cultural practices restrict women's access to land (Ekaas et al., 2004).

Lack of secure tenure for women causes a great deal of uncertainty, financial dependence, lack of freedom, and more serious problems of landlessness if the relationship ends or the husband dies. Patterns of inheritance may also discriminate against women in terms of the share of inheritance ranging from a

smaller inheritance to none at all. For example in Burundi, a peasant woman cannot inherit from her father or her husband and in the Cameroon's customary practices of levirate (the obligation of a man to marry his brother's widow) infringe on women's right to inherit (Ekaas et al., 2004). These are serious issues in rural areas where access to land and ownership is primarily through inheritance. Inheritance of land from relatives provides much of the family's livelihood security. In many nations, not regionally specific, rural families are sustained by the woman as a widow, a divorcee, single mother, as a wife of migrant worker, or an older woman or woman with disabilities. In Ecuador the group of "women alone" accounts for 21.3% of woman in rural areas (Ekaas et al., 2004).

Rights and access to land are part of basic human rights as stated in Article 17 of the United Nations Declaration on Human Rights resolution 217 A(III) of 10 December 1948 (Sub-articles 1 and 2). It is essential that these issues are addressed at the highest policy level, to encourage gender based national and international strategies and institutional planning (2005). Gender issues should not be concealed in tenure security, land rights, law reform and regularisation debates; they should be emphasised to reflect the extent to which gender discrimination affects poverty alleviation strategies.

4.4.3 Partial Interests

Tenure derived from people's rights to use and access natural resources are important among rural societies. Natural resource tenure has reached much greater status in discussions of international development of tenure security, particularly stemming from our growing appreciation of social and environmental values in support of sustainable development (ILC, 2004c; Deininger, 2003).

Land tenure is a familiar term, but natural resource tenure is less understood and is typically only acknowledged informally through local regimes. Resource tenure was derived from the French meaning of the term land tenure, *foncier*, that includes cropland and all natural resources linked with it (Bruce, 1998). Resource tenure acknowledges a degree of rights in forest products, trees, pastures, water resources, and sacred sites. These tenure arrangements are often localised, and managed without formal systems of documentation within a society.

Natural resource tenure is considered in the same context as the economic and livelihood value of land tenure. This tenure is recognised through traditional practices of use, verbal agreements, lineage, acquisition and occupancy. Tapping resin from rubber trees or extracting sugar and oils from palm trees are examples of traditional practices. Rights to natural resources connected or disconnected to the land may be referred to as "partial interests". Partial interests are identified as divisible claims from the full land or resource claim, particularly those which may overlap or override other rights. Partial interest examples are also grazing rights, fishing rights and rights of passage. The rights and variable business opportunities attainable from a partial interest may be complex. The interest rights in the tree may not have any association with the owner of the land to gain access to the resource, and the labour required to make the produce may be hired. The resource may be rented out for someone else to reap the benefits of the product while a rental-type agreement subsidises the owner.

Depending on the value of the resource some management systems have formed registries to formally document and regulate complementary rights. Registries require the resource base to be broken down for mutual beneficiaries claiming different interests, as opposed to exclusive land rights. Although land rights may not be completely exclusive and may be subjected to depth limitations or restrictions to owning minerals found below the surface (Wallace and Williamson, 2005b). Resource rights may change between the wet and dry seasons in temperate climates add complications to partial resource interests. These conditions vary according to the environment, resource uses and management practices.

More regulated systems are used to deal with water rights in irrigated areas where there is a scarcity of water. 'Hydraulic societies' have historical significance in Asia for their exceptional irrigation systems and community water allocation operating for thousands of years (GTZ, 1998). These practices continue today and rely on good management as water stressed areas increase and arable farming land decreases.

Secure access to resources is fundamental to the eradication of hunger and poverty, resulting in greater productivity, increased incomes, and sustainable land use (ILC, 2004a; Mitchell, 2005).

> One of the greatest environmental vulnerabilities that poverty brings is a high dependence on natural resources for subsistence, particularly in rural areas. …The poorer the household, the greater the share of income from natural resources. (UNDP et al., 2004).

Access rights for forest dwellers and agricultural communities reliant on forest products are just as important as land ownership is to agricultural farmers. Forest products are regularly used by the poor and people living in remote places to construct houses and other equipment, and provide food and medicinal products. Rights of access to these areas are complex and largely informal but provide a significant means of livelihood security, and therefore require similar security of tenure as land ownership.

> Without well-defined and enforceable access rights, the natural resource base, and in particular common property resources, are easily threatened by encroachment and opportunistic behaviour. (Cord, 2002)

Natural resources are also collected by local communities for the market, including fuel wood, charcoal, rubber, aquatic life, non-timber forest products and handicraft woods and materials. Regulations and limitations on the collection of these resources are consistent with management strategies rather than limitations inherent in the tenure to define formal boundaries. A study of Ugandan forests found individuals who lack secure rights to forest resources are tempted to use up resources before they are lost to the harvesting efforts of others, often reverting to open access conditions and encouraging exploitation and a rapid depletion of resources (Banana and Gombya-Ssembajjwe, 1998). On the other hand, those with more secure resources rights showed greater tendency to participate under the rules of management (Banana and Gombya-Ssembajjwe, 1998).

Understanding tenure characteristics helps to determine the relationship between local people and their participation in the management and protection of forests and other natural resources. Numerous forest populations endured periods of restrictions on accessing and gathering forest resources under colonial control or during the expansion of strong central powers. Failure to recognise indigenous and local population's participation in the management of resources imposed

disincentives on local communities to protect trees or engage in reforestation projects, and resulted in an excessive reliance on the State for punitive measures to enforce the law (Gibson et al., 2000). In the Ugandan case, researchers observed that degraded forest reserves resulted from a lack of tenure security and rule of enforcement (Banana and Gombya-Ssembajjwe, 1998). The acceptance of traditional custom in resource extraction for subsistence of community residents motivates more sustainable resource management than central state management (Banana and Gombya-Ssembajjwe, 1998).

Resource tenure typically involves strong inheritance patterns which influence sustainable decisions of production and resource extraction. Sustainability decisions are increasingly being challenged by population pressure, market access, evolving land tenure and a change in traditional practices for higher economic gains (GTZ, 1998). These pressures strongly affect the security of informal resource tenure and are rarely matters pursued by projects involved in securing land tenure (GTZ, 1998).

4.4.4 Collective Action and Communal Tenure

In rural areas use of land as a shared resource is common. On a daily basis people collectively engage in activities:

- to plant or harvest food together;
- use a common facility for marketing products;
- maintain local irrigation systems;
- patrol local forests under local management rules; and
- meet to decide on rules related to the above (Meinzen-Dick and Di Gregorio, 2004).

Securing tenure over large areas of rural land for communal groups and sustainable local resource management is often overlooked in land administration system designs. Foreign investment interests, large corporation leasing opportunities, and local government interests often overshadow accommodation of people on the ground and provision of tenure security for local people. Generally the greater economic opportunities are favoured. The allocation and preference towards private rights stems from Hardin's "tragedy of the commons" argument justifying privatisation as the best strategy to conserve resources and

ultimately make the highest and best use decisions of management (Hardin, 1998).

This argument should be used in moderation when endeavouring to protect natural resources, forests, game reserves and marine areas. Exclusive conservation policies should only be enforced once careful assessment of the sustainability and community survival risks of local inhabitants and their customary practices are considered and mitigated. Usufructuary rights lie at the root of customary and communal land tenure systems (Glenn and Drost, 1999); these are the rights to equally use and enjoy the fruits and profits of others. Informal local property systems that are communal or tribal are essentially autonomous systems serving an homogenous social group, supported by oral traditions and communal sanctions. They often provide a vital component in retaining cultural identity (Toulmin and Quan, 2000). Often communities living within common natural resource areas evolved within the changing local environment and adjusted their behaviours accordingly. Indigenous communities are often observed as organising local management of communal resources collectively and sustainably surviving centuries through floods, fires, pests, overpopulation, and warfare (Meinzen-Dick and Di Gregorio, 2004).

Collective action and common property resources were put under increasing pressure with the expansion of commercialisation and capitalism in the push for individual tenure security as a workable tenure option within a land market. The postcolonial era of communal and informal land tenure systems have re-emerged to contest state-dominated hegemonic land dispensations (Home, 2005). Hardin's theory for privatising the commons was strongly challenged by those believing the benefits of common property ownership and collective action for the management and conservation of natural resources (McKean, 2000; Meinzen-Dick et al., 2002). Conservation is said to transpire when genuine common property management emerges as coordinated, rather than independent actions by individual users of common pool resources (Ostrom, 1992).

Collective action is the formal or informal organisation of a group to achieve a common interest which can be instituted through common property regimes (Meinzen-Dick and Di Gregorio, 2004). These regimes are often undervalued or misunderstood. Collective action that integrates the recognition of user rights,

requires efforts in localised authorities of management, but provides incentives for conservation and security for individuals and households within the group (Meinzen-Dick and Di Gregorio, 2004). The combination of collective action and rights to common property resources also provides mutual insurance, which can act as an empowerment tool for vulnerable and marginalised groups who lack access to resources (Ostrom, 1992).

The conceptual range of attitudes to land and resources among indigenous and customary groups adds another dimension to the problem. Integration of localised communal tenures into formal systems to guarantee security has stimulated debates about orthodoxies and approaches in common property discourse and collective action for sustainable land management (McKean, 2000; Meinzen-Dick and Di Gregorio, 2004). The differences remain unresolved.

4.4.5 Food Security and Tenure

In agrarian societies, rural land tenure security is analogous to livelihood security; both are intrinsically dependent on the right of access to and use of land and natural resources (World Bank, 2003b). The land tenure and rural focus of the FAO has long recognized the critical link between food security and access to land and secure arrangements as a solution to poverty alleviation and for 'provid[ing] the most powerful incentive for the sustainable management of natural resources' (Moore, 2002). Food security is a function balanced by food availability, access and utilization (Maxwell and Wiebe, 1998).

Secure entitlements to food security benefit streams through continued access to resources for food production, and social security from inheritance patterns and collective arrangements rely on secure land and resource tenure (Maxwell and Wiebe, 1998). Maxwell and Wiebe's (1998) conceptual linkages between land tenure and food security emphasize sufficiency, sustainability, and vulnerability as dimensions of food security. Food insecurity is endured by households when the likelihood for sustainable access to sufficient food is absent for a particular period of time including variable consumption and seasonal production levels (Maxwell and Wiebe, 1998).

The tenure and food security linkage also suggests that food security is more than a direct result of production. Incorporation of access and tenure of resources

has causal effects on production and therefore income. Food security issues are also separately addressed in linkages between income, consumption and nutritional status. Burgess (1999) hypothesises that improved linkages for access to land lowers the relative price of food for families resulting in better nutritional status. Tangential relationships are also described in Maxwell and Wiebe's research finding that investment in land or capital assets to generate income may be as important as consumption as a form of investment in the household's health through labour and nutritional status endowment. Production and exchange decisions have potential long-term tradeoffs negotiating sufficient consumption and investment in non-labour resources that seriously affect resource allocation decisions in the short term (Moore, 2002). Severe food insecurity will eventually prompt the disposal of assets. Local circumstances will decide the strategies to avoid destitution, ranging from adjusting consumption and crops, finding alternative employment, migration, and, ultimately, alienation of land.

Agriculture commercialisation, crop diversification and land markets also play significant roles in mitigation of food insecurity. These strategies are supported by the introduction and promotion of private, individual property rights. Often private property rights strengthen elite food-secure groups, assist with tenure security to raise credit, allow greater economies of scale in agricultural investment, and reverse fragmentation of holdings (Deininger, 2003). However, the effects felt by lower-income groups are mainly negative as these strategies fail to deliver growth and equity of those outside the private commercial sector.

Land, food, and agricultural trade policies are required to better address the causal linkages between tenure security and food security. The assumption that the highest productive output requires private tenure security should be challenged. Resource conservation and access, evolving customary and informal tenures, and availability to credit for smoothing consumption and distress situations must also be considered. While land and food policy is important, Watts and Bohle (1993) suggest that even more so is the political context that defines entitlements and rights and how these rights are contested and won.

For the rural poor, gender, partial resource interests, collective action and food security themes are all mutually associated and dependent on tenure security. Each of these is critically important to poverty alleviation and highlights the

disproportionate value of land and natural resources for poor rural households as compared with less vulnerable people. Common tenure security arrangements require innovative pro-poor alternatives to private title for the rural poor, to address complex and dynamic social and environmental arrangements.

4.5 Tenure Formalisation Strategies

4.5.1 Using Title for Tenure Formalisation – Or Not

Tenure security as a key poverty alleviation tool in most circumstances relies on the formalisation of tenure to 'protect' people's land and resource interests within a formal system. Tenure security provides status and entry into land and credit market activities. Tenure formalisation moves land interests and claims from an informal system to a legally recognised system.

Different modes of tenure formalisation using conventional and unconventional approaches are being implemented in urban and rural sectors. Solutions must be adaptable because development situations are unique reflecting a country's history, culture and attitude, economics, environment, governance and social stability. Consider the differences between urban slums in South Asia, overnight land settlement invasions in Latin America, reconstruction of post war states of Central and Eastern Europe, customary land rights of indigenous Pacific Islanders, and rural land and natural resource management in Africa. Unique formalisation approaches sensitive to local land issues need to be tailored to the different scenarios.

The most heralded approach is the use of land titling. In land administration projects private land titling is the most common mode for delivering land tenure formalisation. Ideally, titling delivers fast, simple and unambiguous registration of private tenure which quickly mobilizes these assets for secure trading, borrowing and raising of capital. Easily accessible, dispute-free areas and the urbanised middle class are often the first to assume formal tenure security. The traditional tool set combines with strong political support, institutional capacity and commitment, stable legal order, and national economic progress (Feder et al., 1988; Rattanabirabongse et al., 1998). Economic growth may be realised at a small scale for titled areas. However as a broad development strategy titling inadequately addresses poverty alleviation.

Systematic land titling is supported in urban, peri-urban and new development areas however the appropriateness of this method is contested in areas subject to customary tenure (Fitzpatrick, 2005). There is significant documentation of the failure of titling programs that aimed to increase tenure security and reduce conflict. Failed tilting programmes are reported to have: allowed wealthier and more powerful groups to acquire rights at the expense of the poor, displaced or female land occupiers (Binswanger et al., 1993; Lastaria-Cornhiel, 1997; Platteau, 2000; Toulmin and Quan, 2000); increased conflict by imposing simplistic legal systems on complex interrelationships (Fitzpatrick, 1997; Knetsch and Trebilcock, 1981; Lavigne-Delville, 2000; Simpson, 1976; Toulmin and Quan, 2000); and increased insecurity by overlaying formal institutional arrangements with informal arrangements (Bruce, 1998a; McAuslan, 1998; Platteau, 1996; Toulmin et al., 2002). The following short statement by Lavigne-Delville is typical of opinions on the failed attempts to register and title African customary land in accord with the de Soto paradigm.

> … In part because it began to undermine the fabric of social life whereby kinship and negotiation guaranteed some sort of access to land and resources for all, leading to the dispossession of the vulnerable. … Customary land transactions and inheritance practice have continued, as land registers and the dreams of technocrats in African and northern capitals have gathered dust (Lavigne-Delville, 2002a).

Interestingly also is the recognition from the international survey body, FIG, that titling cannot be the sole answer and de Soto's 'Mystery of Capital' theory requires more solutions to secure tenure and moreover provide secure *access* to land (Magel, 2001).

4.5.2 Customary Tenure Formalisation

Customary and informal tenure systems are not compatible with private property tenure and individualisation of resources. These tenure systems are fundamentally embedded in complex social processes and therefore attempts to change or replace them involve prohibitive costs and risks (Benda-Beckmann, 1995; Binswanger et al., 1993). In cases of customary and traditional land use arrangements Brazenor et al. (1999) identified a number of tenure practice themes

that could be investigated to help clarify tenure differences and interests. These themes were boundary delineation, occupancy and duration, land concepts and evidence. These help interpret informal tenure systems for security during the transition towards formalised arrangements and the larger land administration response. The idea of treating tenure in themes of 'practices' as opposed to the formal mode of interest was also suggested by Torhonen (2004).

Statutory and customary ownership are being amalgamated in some African countries where traditional land tenure survives in the development of land markets. Some African and Pacific Island states, for example Namibia, Mozambique, and Fiji, have attempted to amalgamate these two ideologically different tenure systems with mixed results.

Australia, Canada and New Zealand recently attempted formal recognition of indigenous culture and land claims. Two hundred years after 'white' settlement in Australia, the first recognition of Aboriginal systems of land ownership were accepted into law through the Aboriginal Land Titles Act 1976 for the Northern Territory. Almost two decades later a national Native Title Act (1993) was passed establishing legal procedures for the determination of native land title claims. Further developments were made in 1996 with the Wik Case that allowed native title on land held in pastoral leases and other less formal arrangements. Native Title claims involved lengthy and costly court and tribunal dealings. At present over 480 native title applications covering more than 40% of the land mass are registered (Geospatial Services, 2005). In Canada similar scenarios transpired since 1973 through a comprehensive native land claims policy at both Federal and provincial government levels (Ting, 2002). This policy proposed that 'the settlement process will exchange undefined aboriginal land rights for defined rights and benefits set out in legally binding agreements' (Sinclair and McCallum, 1997).

The New Zealand culture widely embraces their native Maori tribal history in a more integrated approach than do most nations. A much longer history of recognised native land rights exists in New Zealand as compared with Australia, even though the initial idea of recognition was to help impose the English system (Robertson, 2004). The New Zealand indigenous land model is internationally unique because of its individual rights claims and yet collective group governance

and management (Robertson, 2004). The New Zealand Government is also to be commended on the passing of the Resource Management Act (RMA) in 1991, which signifies advanced environmental conscience and innovative management approaches (Ting and Williamson, 2001). The New Zealand Maori tenure system appears advanced and integrated, however numerous legal and institutional obstacles over the years fragmented cultural ties and limited economic, social and environmental opportunities that are available to other citizen landowners (Robertson, 2004). A major land policy programme is the next step for New Zealand's continuing Maori land issue agenda (Robertson, 2004).

4.5.3 Alternative Formalisation Scenarios

More progressive examples in development and formalisation can be seen in China and Vietnam. Both countries are making significant progress towards limited private land markets through recent changes to constitutions and laws. These are tentative and carefully engineered shifts in property theory and land administration tools. It is too early to determine the affects of new projects on the economy and livelihood of people however close monitoring of initiatives are predicted to reveal benchmark results.

Alternative solutions look at partial interests rather than full land rights. These can cross all tenures from customary to statutory and even be used in market based systems (Wiebe and Meinzen-Dick, 1998). Intensive effort and established institutional infrastructures are required to implement this complex and dynamic system of partial interest acquisition (Wiebe and Meinzen-Dick, 1998), which are often seriously lacking for rural operations. Torhonen (2004) uses a similar method to categorise the crossing of boundaries, between statutory and customary ruling tenure practices, in a multi-layered tenure system. Another suggestion by Torhonen (2004) is to use secondary rights registration as a tool to formally recognise these partial and layered interests within a land administration system. This solution offers tenure security through limited titling without going as far as individual freehold (Torhonen, 2004). Secondary rights registration is a helpful solution at the formal end of the transitional processes. However even more iterative steps and innovative tools are required to formalise interests recognised in traditional social systems used in rural settlements prior to registries of interest

because of the generally low resource value compared with the high maintenance cost of formal administration.

Two examples of iterative steps are Thailand's Land Titling Project specifically for rural farms, and an urban project recently designed for Namibia. The Thailand example relies heavily on a private tenure relationship and uses four stages to progressively secure tenure and increase entitlements from use and occupancy rights to full ownership for mortgaging and transfer functions (Rattanabirabongse et al., 1998). The Namibian example is of a similar nature, beginning with the 'Starter title' and advancing to freehold title and status. This method is based on individual tenure however with group based rights (Christensen, 2005). Namibia addresses the urban informal situation by primarily looking at housing parcels, rather than for investment into agricultural production. Registration of interests is in the form of 'block' titling held in ownership by a local, central or regional government body or community organisation and no individual survey is required on the starter title (Christensen, 2005). The landhold title is surveyed and registered as site specific. Building, development and financial transactions are restricted, however these advance as the status is upgraded (Christensen, 2005). This system requires paraprofessional land measurers to meet survey standards, it requires minimum maintenance and uses a cadastral base as an integrated part of the digital information system (Christensen, 2005). The downfalls of this system, as with many other computerised solutions are the extensive technical and financial resources required even without the need for professional surveyors (Christensen, 2005).

Namibia is one example of the innovations available through flexible urban tenure solutions in dynamic and progressive environments being sought through global campaigns and research to improve urban informal settlements[1]. Development of informal urban settlements no longer relies on land titling. Sociology experts are requesting more pro-poor alternatives and secure tenure although considered essential for mature land markets, is not deliverable on a scale large enough to reduce mass poverty (de Soto, 2000; Payne, 2002). Markets also require other capacities such as taxing land at market value, stabilising the

[1] This refers to the UN-Habitat, Global Campaign for Secure Tenure, and the innovative work by Augustinus 2003, de Soto 2000 and Payne 2002.

legal framework, simplifying building and planning regulations, mandating utility services, better spatial and social planning, and public sector capacity, which are often in short supply in poor informal areas.

The Land Tenure Division at UN-Habitat is expanding their tools to deliver tenure security and recognition of informal arrangements for urban settlements. These approaches deal with the conflict between property rights and human rights, which are regarded as supreme (UN-Habitat, 2002). UN-Habitat also addresses gender equality and tenure security simultaneously. A third theme is the delivery of adequate shelter. Shelter strategies, in conjunction with secure tenure, are believed to have catalytic effects leading to other processes and issues vital to delivery and upgrading of sustainable shelter and poverty alleviation (UN-Habitat, 2002).

Tenure security tools used by UN-Habitat as a substitute to individual titles include: group registration, block titling, and individualised lease rights managed by groups in conjunction with local authorities (UN-Habitat, 2002). Reflecting Payne's continuum of rights (Payne, 2002), additional solutions advocated by UN-Habitat include: the introduction of anti-eviction laws; contractual agreements written and/or oral; recognition of local records, registers, bills; local authority cadastral information; and eventually title or deeds registration (Augustinus, 2003). Payne (2002) suggests that solutions must stem from the failure of legal systems to recognise claims of lower income groups to land and shelter.

Numerous title alternatives are used around the globe in attempts to provide low cost, low resource intensive, fast, easily adaptable tenure security. They have various legal, institutional and technical qualifiers for local systems to adopt. Examples are: the right of occupancy; cadastral certificates; qualified titles used in Malaysia; land concessions used in Cambodia; codification; village titles; ranch titles used in America; and land credit programs recently adopted by The World Bank (Van de Molen, 2005). These options involve a variety of methods for boundary surveying, qualification, accuracy and recording of title boundaries, registration processes, proof of evidence, use rights, market and credit options, legal system requirements and the registration of beneficiaries.

Transferring Tenure Formalisation

As discussed earlier urban and rural areas differ significantly, making it difficult to transfer UN-Habitat's shelter and tenure security options proposed for urban areas to rural areas. Securing tenure interests and their local resource interests of rural, communally settled groups is generally overlooked in the design of land administration projects particularly in Asia. A number of African nations are further advanced in identifying new ways to formalise communal type tenure in rural communities (Van der Molen, 2003). Various environmental and social variables inherent in these communities require unique solutions that cannot simply be reassigned into Asian scenarios; however, aspects of the formalisation and institutional building processes can possibly be applied.

The institutional, legal and technical support for securing common tenure types in developed systems do not capture all observable people and resource relationships. They are particularly poor at addressing issues of the rural poor who are heavily dependent on immediate social arrangements that respond quickly to vulnerable livelihood scenarios. Often arrangements such as contract labour, nomadic pastoral allocations, share cropping and religious or de facto tenure systems based on local arrangements are overlooked for the premeditated, fast and easily imposed private title option.

4.6 Chapter Summary

Complexities involved in the rights, interests and relationships people hold with respect to land and other natural resources are now better understood in development discourse. The rural-poor are intrinsically linked to themes of food security, gender issues, common property natural resources, and collective action. These relationships illustrate the strength of interests guaranteed by local communities. Statutory and other systems, designed to deliver 'tenure security' as a catalyst to alleviate poverty need to adequately address these complexities.

The processes need to be flexible and adaptable. The integration and formalisation of tenure for rural land security must be shaped by variable people to land relationships, limited physical and human capacities, distinctive dependence on natural resources and the effects of immediate poverty. The boundary between informal and formal tenure arrangements and tenure security

remains fuzzy, and tools to address these issues in rural settings are not sufficiently developed to alleviate mass poverty and instil sustainable land use management. However a more comprehensive understanding of complex tenure issues faced by the rural poor will significantly improve strategies for pro-poor land administration, poverty reduction and sustainable development. The following chapters are dedicated to further uncovering tenure issues of the subsistence rural poor through empirical investigations.

CHAPTER 5 – RESEARCH DESIGN

Too often the view from above, where a project planner or manager sits, fails to comprehend the historical, geographical and social context of a project that may stand in the way of project objectives. … the view from the ground revealed horizons not visible from above (Salmen, 1989, pg. 72)

5.1 Introduction

The first part of this thesis explored the changing land policy and land administration responses to alleviating poverty and delivering sustainable development. It described the complex dimensions of tenure and formalisation methods currently used to deliver tenure security. Background chapters revealed the need to support a wider range of tenures for incorporating social and environmental dimensions to more appropriately address rights and access relationships of rural societies and their land and natural resources. This chapter outlines the research design for empirical investigations of these tenure issues through the subsistence rural poor in Cambodia.

Section 5.2 builds on the research hypothesis and literature reviews, and identifies key research questions. This section also reveals a preliminary framework design to be questioned and developed during the research. Research approaches are investigated in Section 5.3. Suitable case study methods are chosen and discussed in Section 5.4, including the research timeframe and ethical considerations.

5.2 Research Model Development

To deliver on sustainable development, effective land policies must reflect existing situations, particularly traditional tenure arrangements, so that paths of development consider the history and context that shape people to land relationships. Tools typically used in land administration do not work well for the poor, though the problem is not with the tools themselves. The standard tools rely on administrative, political and technical resource capacities that cannot be

sustained by poorer nations, particularly where legal order fails, or where formal processes are deliberately avoided by the intended beneficiaries.

Land administration system designers too often are far removed from the source of the problem, and approaches to achieve tenure security and land access for the poor are constrained by rigorous top down procedures such as systematic individual land tilting. This particularly applies to the rural poor where socially derived tenure practices and security systems play a critical role in rationalising limited resource and livelihood conditions. Large land administration infrastructures and conventional tenure security instruments are often imposed by default; thus land administration system designs failure to reflect the diversity of diverse people to land relationships for rural areas. Bridging this gap by incorporating a range of tenures in the modern context of land policy will lead to better land administration system designs and more effective outcomes. The research hypothesis under investigation is that:

> *Tenure arrangements in poor subsistence rural societies are complex and require alternative strategies other than private titles to alleviate poverty and deliver sustainable development.*

It is outside the scope of this thesis to question the entire land development paradigm or national land administration strategies. This thesis examines a niche beneficiary group of land administration systems – the subsistence rural poor. Key people to land relationship issues specific to the rural poor were identified in Chapter 4 as gender, collective action, partial interest and food security. Detailed empirical exploration of the social and environmental relationships was recommended to identify local tenures among the rural poor. Informal land tenure practices, vulnerability and dependence on natural resources, economic, environmental, and social instability and capacity issues are major reasons why the rural poor require empirical investigation. This thesis investigates traditional rural land tenure systems before they are overshadowed by formalisation strategies preoccupied with private property rights.

The following lines of enquiry were used:

- What are the different people to land relationships?
- What are the needs of the people within their own environment?
- What is identified as informal and formal tenure and what are the sources of tenure security?
- How can informal and vulnerable social practices be explained within a formal framework?

Answers to these enquiries assist an understanding of local rural tenure characteristics and influences. This information can then be used to improve land administration options to address sustainable development and poverty alleviation.

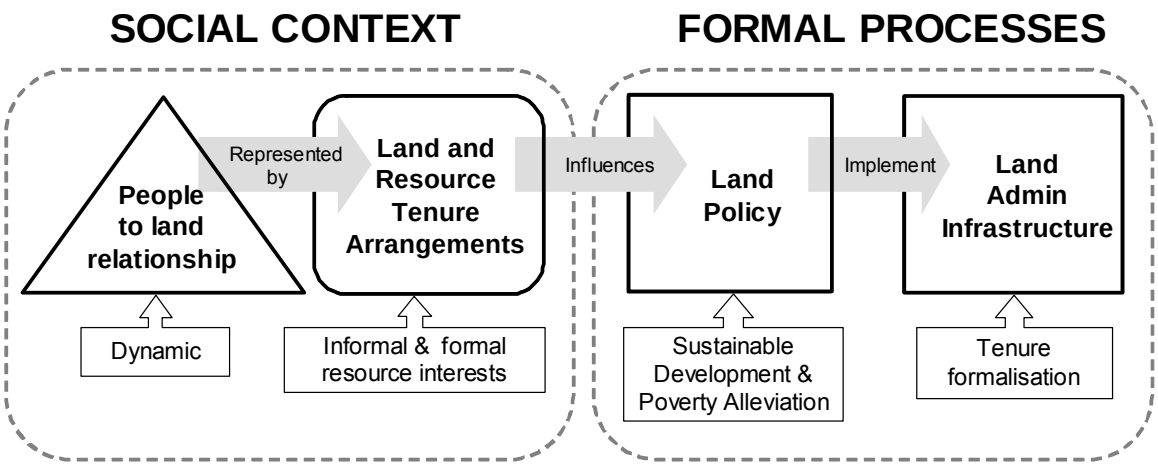
The first part of the thesis:

- investigated land policy for sustainable development and poverty alleviation;
- investigated elements of land administration systems project designs to support sustainable development objectives;
- described dimensions of tenure topology as they relate to a complex set of rights reflected by various people to land relationships; and
- commenced an exploration of tenures in poor rural societies in developing countries.

From these investigations a preliminary framework was developed summarising early findings. This framework (Figure 15) represents the processes for formalising tenure, firstly in the social context and then under formal processes. The initial stages of formalisation require an understanding of the dynamic and unique environment, which is based primarily on the existing socio-economic context, as well as the cultural, natural and built environments. The first triangle represents the dynamic and diverse people to land relationships and the need to incorporate these into the land administration approach for sustainable development as agreed in the Bathurst Declaration (UN-FIG, 1999b). These evolve naturally and are represented by tenure arrangements using informal to formal processes to secure resource interests and organise the use and distribution of natural resources among societies.

The right-hand side of the diagram incorporates processes stipulated by formal and institutional procedures and regulations. These processes typically start with sustainable development and poverty alleviation guiding policies. A land administration infrastructure is then developed to accommodate land tenure formalisation services such as land titling, registration and valuation. Using basic tenure categories of public and private occupation, land claims are rapidly categorised and immediately gain legal security status.

Figure 15 – Working Model for Tenure Formalisation Approach



This diagram illustrates the process of gaining a comprehensive understanding of the existing scenario prior to establishing or implementing land administration services. The land administration infrastructure built to implement policies offers a number of methods to formalise tenure in conjunction with mapping, which involves institutional strengthening, capacity building, and legal reform. However, most tools available in land administration support formalisation of a narrow and selective range of tenures, and fit uncomfortably into the informal systems practiced by rural poor.

Therefore the second part of the thesis uses empirical research to:

- identify unique characteristics of traditional rural tenures and their current role in formal land administration systems, and
- devise a framework allowing more comprehensive integration of the alternative tenures within cadastral based land administration systems to serve the needs of the rural poor.

5.3 Selection of Research Approach

5.3.1 Qualitative Research

Both quantitative and qualitative research approaches were considered for investigating rural tenures. Quantitative methods are frequently used to monitor and evaluate large land administration projects. This method is often used because it is considered to be a more rigorous, reliable and valid investigative approach. Quantitative methods assess performance primarily based on indicators of activities accomplished within given timeframes such as: parcel-based titling and registration figures, surveys and mapping coverage, delivery of staff training for capacity building and public awareness campaigns, policy and legal work documentation and report completions, and procurement and financing arrangements. However, these measures provide a vague and unaccountable indication of the impact the project has on sustainable development or poverty alleviation. Supplementary investigations of sociological monitoring and impacts that typically fall outside the scope of the project, are beginning to be incorporated within project design.

This research attempts to identify sustainable development and poverty issues relevant to land administration projects through in-depth investigations and qualitative measurements of poverty trends are recognised as being far more effective than more statistical or quantitative efforts (ADB, 2002).

Qualitative research deals with social phenomena where principles are not true all the time and in all conditions, to explain how and why things actually happen in a complex world. Sociological research tries to answer two fundamental questions about society, '*What* is going on?' (descriptive research) and '*how* or *why* is it going on?' (explanatory research) (de Vaus, 1995; Yin, 1989). What and how questions of informal rural tenure are the basis of inquiry in this research.

> The underlying assumption is that if you cannot understand something in the specific first, you cannot understand in the general later. (Rubin and Rubin, 1995)

Qualitative research is criticised for being a "soft" social science approach as opposed to quantitative research that is considered hard-nosed, data driven, out-

come orientated and truly scientific (Yin, 2003). However qualitative research has similar standards of credibility when rigorously undertaken (Krefting, 1991).

> The assets of qualitative methodology in sociology need to be stressed and the shortcomings of quantitative methodology need to be exposed in their boldest relief. (Filstead, 1970)

This is especially true in development projects where failure continually occurs and poverty alleviation is hard to achieve. Less quantitative monitoring and evaluation and more qualitative evaluation would provide better assessment and advice. Additional reasons for use of the qualitative approach used here are that:

- Empirical research on social phenomena is in question – the rural poor's land arrangement and tenure practices are behavioural and influenced by the physical, sociocultural and psychological environment.
- Qualitative interviewers listen to people as they describe how they understand the worlds in which they live and work (Rubin and Rubin, 1995).
- Qualitative research offers reflexivity – communication is an explicit part of knowledge production, as is the subjectiveness of the research and those being studied (Flick, 2002).
- A variety of methods in qualitative research help develop different lines of enquiry and data collection (Flick, 2002).
- Specifically qualitative research is a return to the local, which is an important focus of current land policies. Qualitative research examines systems of knowledge, practices and experiences in the context of local traditions and ways of living in which they are embedded, instead of assuming and attempting to test their universal validity (Toulmin, 1990).

5.3.2 Researcher Standpoint

Two standpoints were contemplated, as an evaluator, and as an object observer and interviewer. The evaluator standpoint was felt to be too distant from the core problems. It would focus research on people at high authority levels and in government positions and bias results towards their views typical of a top down approach. The limited availability of qualitative data would also inhibit the study.

Therefore participant observations and interviews were selected as the methodology.

Participant observations and interviews allowed a close connection with the subjects and first hand observation of them interacting in their environment. They also allowed modification of the investigation according to conditions and issues that arose. Differences in the experiences of poor rural households and the researcher were important considerations.

5.3.3 Case Study Research

This research used a case study approach to investigate questions within manageable constraints and to build an understanding of the complex social and environmental phenomena of people to land relationships in rural areas. The data gathering added to literature reviews and reports, and expert interviews. The field study aimed to collect complementary information to support socio-economic and environmental information obtained from literature reviews and to provide more qualitative sources of information (Nichols, 1995). Most importantly, field case studies provided a practical level of understanding of local circumstances (Nichols, 1995).

Case studies allow a close reading of individual examples of a society and focus on the system of actions and relations, rather than a one-time cross-section of individuals (Feagin et al., 1991). Case studies also help to build theory and arrive at generalisations (Evans and Gruba, 2002). They are commonly used in sociological settings such as:

- policy, political science, and public administration research;
- community psychology and sociology;
- organisational and management studies;
- city and regional planning research, such as studies of plans, neighbourhoods, or public agencies, and
- the conduct of many dissertations and theses in the social sciences. (Yin, 1989)

This research in these settings examines a broad rather than narrow topic; acknowledges the context and phenomena being studied; and requires multiple

sources of evidence. According to Yin (1993), this justifies the case study approach. Policy, sustainable development, and poverty alleviation are broad topics of enquiry, while the focus of subsistence rural poor societies and tenure security through land administration provide the contextual setting of the case study. The unique social arrangements are placed within the pragmatic constraints of a formal institutional setting allowing a study of commonalities in social phenomena.

5.3.4 Case Study Site Selection

Multiple case studies were used as representative examples of typical scenarios to facilitate a new understanding of relationships (Yin, 1989). This was inferred by investigating individual and societal behaviour within existing villages covering a cross-section of rural environments. To observe and describe people to land relationships and informal land and natural resource use and management trends, a descriptive case study theory approach was applied as distinct from explanatory or exploratory approaches (Yin, 1989). Additional reporting from organisations and governing authorities provided important perspectives of planning, management and development.

Culture, economics, landscape and development directions influence people to land relationships differently. Therefore it was necessary to slightly confine the research in order to build generalisations for a similarly influenced group. Southeast Asia was chosen for the region's prevalent land administration activity, high rural populations and familiarity of the region and culture. Examples and experiences from other regions also made valuable contributions at the broader policy level.

The selection for representative case study sites was identified through a reconnaissance field trip for two months in Thailand and Cambodia. This reconnaissance trip provided insights into current land issues and the stage of development of countries within the region. Cambodia was selected as the most appropriate place for conducting empirical research based on the following criteria:

- National development commitments support sustainable development and poverty reduction strategies.

- There is political and operational commitment, and international support for establishing a land administration system within a project environment.
- There is a history and ongoing problems relating to social and environmental land issues.
- There is good accessibility and transparency of case study field sites, cooperative research contacts, and existing studies and documentation.
- Rural areas often have limited exposure to formal market-orientated land administration services.
- A large majority of the population are accustomed to informal social practices guiding land use, management, distribution, transfer, occupation and ownership activities.

Initial field investigations and discussions with locals and foreign experts revealed a range of scenarios for investigating the Cambodian rural landscape with differing tenure arrangements and levels of tenure security. The timing of this research was significant as the national government was at the initial stages of design and implementation of the multilateral financed Land Management and Administration Project (LMAP). A large component of this project is devoted to land titling for tenure security. Contacts were established within the Ministry of Lands and LMAP Project Team. This presented opportunities to build solutions according to real operational constraints in a poor society struggling with governance issues and the prevalence of informal systems. Early stages of project development presented unresolved problems and development issues in management, policy and institutional processes. Cambodia has a high presence and dependence on foreign aid providing project-based assistance. Therefore additional natural resource management programs addressed sustainable development and poverty reduction through smaller projects or alternative government sectors.

After preliminary investigations, Thailand did not meet the research criteria, particularly as it was in the final phase of a land administration project that started in 1984. Institutional capacity, economic status and land market activities in Thailand are beyond the stages of requiring pro-poor development assistance. In 2004 Thailand officially stopped being a recipient of Official Development

Assistance aid. Land issues continue to be problematic; however they require more concentrated and consultative efforts in specific regions often closely associated to political issues, rather than broad poverty alleviation issues. Land issues affecting hill tribe communities in Northern Thailand stem largely from politics that incite a dysfunctional integration of ethnic minority groups with the general Thai population (Ganjanapan, 2000). Investigating serious political agendas was not the aim of this thesis.

The Thailand reconnaissance visit provided a valuable insight into a 'best practice' land administration project through visits to the Department of Lands project office and cadastral planning and mapping offices in Bangkok. Also adequate levels of capacity were observed in rural agricultural offices and tenure security upgrade procedures appeared functional. Common land administration system problems continue across agricultural, forestry, environment and land government sectors due to political conflict, legal obstructions and unlawful land activities. However, the land administration system is developed and services the majority of the population through formal mechanisms.

Side field trips in Thailand demonstrated innovative and multifunctional examples of programs using alternative tenure options to benefit people and the environment in sustainable processes. An example of this was observed during a monitoring field visit with the Population and Community Development Association (PDA) to Mahasarakan, a rural town in eastern Thailand. On the outskirts of the town, PDA, acting as a trustee, formally negotiated on behalf of a small community an otherwise unattainable lease agreement of unused Government land alongside the railway. PDA allocated parcels of land and cultivation use rights for poor landless family groups and individuals. PDA also provided basic education in cultivation to help members become self sufficient and then on-train others. PDA acted as guarantor and adequate tenure security was achieved for poor households to invest in small produce trade with close access to local markets. These programs are very intensive to establish and require continual monitoring. Witnessing this project was important as it demonstrated innovative possibilities beyond prescribed land administration project boundaries.

Other developing countries such as Laos and Vietnam were rejected as case study locations to add to the Southeast Asian experience. The difficult nature of conducting research in developing countries, the different languages spoken in each country combined with limited resources, funding, and timing deemed further country explorations impractical and unfeasible.

The next decision was selection of appropriate village field sites within Cambodia. Individual and diverse sites were selected based on:

- accessibility – both geographic location and networking opportunity for entry to villages,
- stage of village development – in terms of aid assistance and formalisation of land administration and management activities,
- natural resource characteristics and the society's use, occupation, ownership and management of resources,
- distribution of occupational practices, and
- village settlement patterns.

Limitations on field studies in Cambodia were:

- the scope of activities possible by an independent researcher – gathering large amounts of data single-handedly, as opposed to an entire research team of native speakers,
- resource availability and reliability – village data may not be entirely reliable,
- language and communication barrier – the researcher was completely dependent on conducting household interviews through a translator and in other higher level interviews through limited English understood by interviewees,
- security concerns – primarily these were expressed by locals limiting participant observation time and remote travel, and
- time – only three months were allocated to conduct field studies including specific site selection, which was inappropriate and difficult to organise prior to departure.

The social structure in rural Cambodia displayed some homogeneous qualities and yet distinctive village level characteristics, which provided a good entry level

for investigating people to land relationships. Quantitative census data at this administrative level was also available as supporting information and aided site selection.

Chapter 4 revealed an initial set of conditions affecting the rural poor and their tenure arrangements: gender, natural resource access, collective action, and food security. To ensure these issues and a range of social practices and tenure characteristics were investigated, three case study sites were chosen. The study sites were selected in terms of village characteristics and diversity of natural resource use and access. Land management and development programs operating within the villages were also investigated. The three rural villages selected were, Chi Meakh, Srae Srama, and Ou Ta Prok, each displaying cross-cutting environmental and spatial characteristics, variable settlement patterns and stages of formal development. Each village was a manageable spatial and demographic size capable of being thoroughly investigated over a short period.

5.4 Research Design

5.4.1 Research Methods

The case study approach allowed various sources and data collection methods to reveal, build and clarify information. This was important considering the investigation involved informal and unpredictable social practices in the field. Key informants outside the village case studies assisted in informing on multi-tier development, administration, land titling, resource management and planning, and capacity building programs.

Various research methods were used in the field investigations: quantitative baseline information, qualitative face-to-face interviews, observations, transect walks and secondary documentation and theory. Interviewing was the primary technique for gathering empirical data using different styles: structured, semi-structured, informal and focus group interviews. Face-to-face interviews were the only viable method for obtaining survey-like data due to the language barrier, interviewee illiteracy, and limited forms of alternative communication. Structured and semi-structured interviews were used for government officials and project advisory staff. Qualitative data was gathered from household interviews and

informants during transect walks, motorbike rides and boat trips. Structured questionnaires with open-ended questions were asked during household interviews as part of the qualitative approach. Each interview was tailored to deal with new information being revealed. Appendix 3 outlines the interview question framework.

Key interviews were undertaken during the early stages of entering the village to gauge general social and resource relationships and current activities operating within the village. Additional focus group interviews relating to these activities could then be coordinated. As the topics of the village focused interviews differed, guiding questions for specific village topics were prepared. Cross-checking information with outsiders familiar with the village, particularly NGO staff who had insight into both authoritative and village information was beneficial. These opportunities often tempered biased information gained from villagers and village committee members and highlighted differences between perceived knowledge and the actual understanding of resource dependence and broader sustainability issues. Collecting information from a variety of informants helped to triangulate and assess information gained from different perspectives.

Figure 16 - Village group sketching the availability of community resources with research assistant

Figure 17 - Picture cards to illustrate available resources

Illustrative material and maps helped generate ideas and transfer knowledge between interviewee and interviewer in interviews and focus group discussions. This significantly helped overcome communication and concept barriers. Examples of these methods are shown in Figure 16 and 17.

People to land relationships were also revealed in mapping and transect exercises and continual field observations. Historical insight into village settlement was important information to gather through conversational questioning to clarify patterns of land and resource use, major events impacting on social order, economic opportunities and changes to the environmental landscape.

Debriefing sessions with the research assistant were used to share impressions of the interviews and observations. These formed an important part of the qualitative research process adding context and a comprehensive understanding of interview situations that may influence interpretation of results.

Quantitative data about village and commune services, infrastructure, and population demographics were retrieved from the 1998 Census Data Collection conducted by the Ministry of Planning, National Statistics Institute. This data was used to provide baseline information suitable for establishing the development and resource base of the villages and to confirm findings.

Previously documented case studies and reports in the Cambodian rural context offered a valuable standpoint when approaching complex and diverse situations. Moreover, they offered ways to see behind the bias of simplistic data originating from quantitative socio-economic databases.

The following table provides a summary of objectives for the field study research methods.

Table 7 - Field Study Research Methods

INFORMANTS and OBJECTIVES	TOPICS COVERED
Commune and Village Head *Obj: To describe village functions and learn about possible external influences and constraints.*	Roles within the village structure Rights/authority of leaders - distribution, settlement, community affairs, adjudication. Interactions with formal organizations/ institutions/ government functions.
Village Council Members *Obj: To describe village perspectives and intimate issues from authoritative members of the village.*	Perceptions of land Land issues Future perspectives Understanding of rights – defending security

Household Survey *Obj: To analyse internal factors of household demographics and examine the immediate people to land relationship.*	Social structure Perceptions of land Land and resource issues and future perspectives Understanding of rights – defending security Identify fears and issues households face
Focus Group Discussion *Obj: To identify and discuss major concerns* *Obj: To identify group based incentives for implementation of solutions*	Village development issues Natural resource management and tenure security perceptions Village mapping Assess community dynamics and coordination of project schemes
Observing Participants *Obj: Ascertain spatial relationships among groups/individuals and land to stimulate further questioning*	Clarify information from interviews with real life examples (i.e. collection of wood, harvesting and small scale trade activities). Fencing and security of plot boundaries, especially those left fallow and those in use – describe security measures. Gain spatial perspective on travel between household/work/farm/ family/resources (fuel and food) /schooling/markets etc.

5.4.2 Field Research Time Frame

More than three months were spent in Cambodia. During the initial two weeks field study logistics, field site information and site selections were organised. Another week was spent in the field on reconnaissance with a LMAP land registration team. The following six weeks were spent working from the provincial town of Kampong Thom, undertaking two of the case studies. The third field study was carried out in Pursat province for two weeks. Government agencies and development organisations provided valuable contacts in each of the provincial towns. The final two weeks consisted of meetings with aid organisation representatives and LMAP staff in the capital city, Phnom Penh.

5.4.3 Ethical Considerations

Although the research was designed and conducted independently, the researcher was hosted at the Ministry of Land Management, Urban Planning and Construction implementing LMAP. Information from case studies remained confidential and was used for research purposes only.

Initial correspondence between the LMAP Technical Director and the PhD supervising Professor was critical for conducting overseas study, obtaining visa

requirements and gaining permission to research with the approval from the Ministry.

Sensitivity and ethical consideration was required when investigating people to land relationships. See attached appendix two for consent forms and plain language statements used when conducting interviews. In small villages, land ownership is an integral yet sometimes volatile asset for a household's survival. Therefore while small scale and non-confrontational studies of the research were considered low risk, codification was used to document interviews ensuring participant anonymity and minimising unethical conduct. All information and transcripts gathered, not previously available in the public domain, will not be reproduced or viewed by any persons other than the researcher and supervisors.

Sensitivity of information and respect of culture required consent to be obtained from commune and village chiefs before dialogue with local families was initiated. After this households were randomly approached and an oral consent was obtained before interviews commenced. Participants were advised of the purpose and position of the research and researcher respectively. This aimed to reduce the possibility of others persuading or influencing the participation or results of household interviews. Formal plain language statements or written consent forms were unnecessary and deemed intimidating for household participants with high illiteracy levels.

5.5 Chapter Summary

Case studies in Cambodia are primarily used to examine poor rural subsistence-based people to land relationships. Association and interaction with LMAP staff and project activities at the Ministry of Lands provided important project contacts and information, however this did not influence village investigations.

Investigation of villages within Cambodia for the case study component of the research made it feasible to conduct in-depth research in three villages. Chi Meakh, Srae Srama, and Ou Ta Prok villages provided the variety in the social and environmental dynamics of rural village life as described in Chapter 6. Tenure and land management arrangements were subject to different levels of

formalisation and variable resource requirements. A qualitative research approach using open-ended, face-to-face interviews and object observation methods was ultimately chosen to describe diverse people to land relationships and highlight constraints and demands of tenure and tenure security for investigation in a formal land administration system.

A brief background on Cambodia, the role of LMAP and data gathered from the three empirical case studies are described in Chapter 6.

CHAPTER 6 – CAMBODIAN CASE STUDY

If we'd been born where they were born and taught what they were taught, we would believe what they believe.
(Sign inside church in Northern Ireland, explaining origin of intolerance and hate.)

6.1 Introduction

This chapter is dedicated to examining people to land relationships among subsistence societies in rural Cambodia. This aims to shed light on tenure issues that can be better accommodated in land administration projects designed to provide sustainable development and alleviate poverty. Empirical information gathered through interviews with village households formed the major contribution to the investigation of these relationships. Supporting information was sourced from the LMAP team, members of social and environmental development agencies, additional government agency staff and extension teams.

Section 6.2 provides an in-depth study of national historical, political, social, environmental and economic issues in Cambodia that invariably shaped the people to land relationship. This provides a background to the current poverty, livelihood, land and governance challenges. Section 6.3 details the national land administration project (LMAP). The following sections, 6.4 – 6.7, describe important findings from the three individual village case studies, Che Meakh, Srae Srama, and Ou Ta Prok respectively. The structure of each case study report highlights important observations of the Cambodian rural environment and identifies localized tenure arrangements and social and environmental influences. Subjective comments and analysis provide context to case study reports congruent with qualitative nature of research methods.

6.2 Cambodian Historical Context

6.2.1 Introduction

Cambodia is a one of four countries that make up the Indochina region in Southeast Asia. Covering a total of 181,035 square kilometres of land, Cambodia is bordered by Thailand to the west and northwest, Laos to the North, Vietnam to the east and a coastal border of the Gulf of Thailand to the southwest (Figure 18). Cambodia is rich in natural resources, with expansive freshwater lakes and rivers, forests, and arable agricultural land. The country supports a slowly increasing population of approximately 12 million people.

Figure 18 - Map of Cambodia including Case Study Areas

Cambodians have witnessed the rise and fall of power and prosperity, interspersed by mass destruction of race and religion over the past 2000 years. Cambodia is a developing nation marred by years of territorial and independence struggles, particularly the devastating and recent civil war led by the Khmer Rouge between 1975 and 1979. Cambodia's social, environmental and economic position today reflects their troubled past with unrest and insecurities strongly affect current political and social behaviour.

Cambodia is an underdeveloped, destabilised, and economically dependent country whose people have struggled tirelessly to find their identity in Southeast

Asia. Historic events shape its people's relationship to land in today's society and control of land was a significant factor in many of these events. A major contextual issue is whether these events engender defensive mechanisms or particular social practices within the community for upholding land rights. Do fears and insecurities in the community affect access to land and resources?

6.2.2 Past to Present - History, Politics, and the Rulers

Archaeological evidence suggests people of Neolithic origin were the first inhabitants during the first and second millennia B.C. These societies are thought to have organised and developed cultural and technical skills. They settled in the river valley areas, Mekong delta region and along the coast cultivating irrigated rice and domesticating animals. Mon-Khmer and Khmer of Austroasiatic Family origin are believed to have arrived around the first century A.D., prior to the arrival of their regional neighbours, Thai, Vietnamese, and Lao. Chinese transcripts sketchily recorded 'Funan' as the first Kingdom to rule the Cambodian region and Khmer people.

The Kingdom's capital was strategically located along the Mekong river north of the delta establishing trade and travel links between South Asia and the Far East from the region's rich rice cultivating and fishing resources (Sidwell, 2003).

By the fifth century A.D., Funan was colonised by Indians, introducing Hinduism and embedding the traditional Indian caste system with feudal land holding patterns and debt slavery practices (Sidwell, 2003). Two centuries later, the kingdom of Chen La, Khmer people from the north, overruled and brought under their control most parts of Lao, western Cambodia, Southern Thailand and areas of the Mekong delta (CountryReports.org, 1997). A split in the Kingdom of Chen La into Upper and Lower (land and water) was attacked on many fronts, until a small Khmer State was liberated by Jayavarman II, a Javanese ruler at the beginning of the ninth century (CountryReports.org, 1997).

The Angkorian period (802-1431) is marked as the greatest time of civilisation for Cambodia, culturally and politically unifying the nation. The centre stage for this period was further inland, north of the Tonle Sap, Siem Reap. Rice cultivation was the root of collective development to support construction of extravagant temple cities. Great reservoirs and canal irrigation systems were constructed to try

to overcome the variability of the monsoon season. Rulers of this period were extremely influential, and changed religious influences from Hindu to Buddhism. However the reign during this period was not only internally contested, but attacked by foreigners. Conflict with the Thai army during the 13th and 14th centuries was responsible for the deterioration of irrigation systems, crippling of resources and weakening of the population.

The Angkorian Period ended in 1431 and the Siem Reap site was abandoned. The following centuries of Cambodia's existence were torn amid struggles between Vietnam and Thailand. Phnom Penh at the convergence of the Tonle Sap and Mekong rivers became the economic and political focal point opening up the state to international commerce and trade. Firstly this was with the Chinese maritime trade and eventually with Europeans by the 16th century.

However Cambodia's fortune and power were soon drained. Control by Thai armies entering from the east, short-lived attempts by Spanish and Portuguese mercenaries across from the Philippines, and a slow eastward invasion by Vietnamese soon challenged the nation. Thai and Vietnamese rulers took different perspectives. Thai rulers acknowledged similarities with the Khmer in religion and culture, while Vietnamese regarded them as barbaric, requiring education in Vietnamese culture (CountryReports.org, 1997) .

The idea of 'untapped' resources in Southeast Asia enticed the French as European countries expanded their powers in the mid 19th century. The French in October 1887 proclaimed the Union Indochinese, comprising Cambodia, Vietnam regions and later Laos (CountryReports.org, 1997; Dobby, 1960). Colonialism brought in by the French could not uncover wealth in village-based economies and therefore resorted to severe taxation on a predominantly subsistence economy (CountryReports.org, 1997). This debilitated independent households with small land holdings reducing them to sharecropping or landless labourers. The French, although destroying the feudal system, retained similar hierarchical operations disguising elitist control in small and medium-sized farms. The French invested in some infrastructure to support growing economic activities in rice, corn and rubber plantations for export (CountryReports.org, 1997). A monarch reigned under French assignment. Freedom of elections however destabilised political

opposition parties between French educated nationalists, democrats and aggressive Chinese and Vietnamese influenced communist groups. Corruption, terror and violence were used to gain solidarity in power.

Control by the invading powers during most phases of the 17th to 20th centuries used Cambodian figureheads as instruments for the ruling power while disabling them of any administrative or controlling responsibility. Cambodian counterparts acted largely as the silent partner in development of their own country for centuries. This was largely attributed to limited access to education in a forced agrarian society as successive leaders tried unsuccessfully to verify prospects of rich natural resources. Civil Code was introduced during French occupation in 1920 westernising property concepts and attempting to establish a cadastral system.

During the Second World War Cambodia was overlooked until the Japanese tried enlisting local support and sought to dissolve French colonial administration in March 1945. Almost 10 years later the Kingdom of Cambodia finally gained independent nation status. This was derived from the Geneva Convention held in October 1954 when French and Vietnamese forces agreed to withdraw. The Geneva Convention divided the French administered Indochina region into four independent states, Cambodia, Laos, South Vietnam and North Vietnam.

After years of mistrusted leadership and in the thrust of new independence, people were easily coerced and political deception was rife. Democratic parties emerged with a focus on urban issues, westernisation and economics. In opposition, the Nationalist Party was restoring Khmer nationalism by reaching out to rural supporters, promoting loyalty to the monarch, protecting Theravada Buddhist religion, and attempting to oust corruption and injustice. Foreign aid from the United States, Russia and China was sought soon after independence. However these ties were not helpful as war broke out in Northern Vietnam with troops encroaching on Cambodian soil.

Coalition of communist groups with strong Vietnamese support threatened Cambodian politics with communist movements throughout the provinces by the early 1960s. Internal unrest severely weakened provincial control, especially in Cambodia's eastern provinces where early control by the Kampuchean (Khmer)

Communist Party was evident by the late 1960's. From 1970 to 1975, under the command of Lon Nol, Cambodians had their monarchy abruptly abolished generating much anxiety among the population.

The defining stronghold over the country came with Solath Sar, better known as Pol Pot, and his Khmer Rouge forces who stormed the capital and brought the nation to a halt on April 14th, 1975. Their mission was to impose an agrarian society for all. This was achieved in a matter of days by disbanding cities, eliminating the educated, and using relentless acts of violence. Again the control of Cambodia was driven by an illusional sense of wealth to be gained through rice cultivation. The Khmer Rouge regime established Democratic Kampuchea, 1975-1978, a period of isolation, devastation, starvation, disease and hunger for Cambodians.

During this period mass migration of people occurred and there was a complete re-organisation of families and villages, and a loss of possessions and self-identity as the educated and politically involved denied their past. The most radical changes were experienced by the 'new people' forced from the city into field labour. In some rural villagers, "old people" were held in higher regard and often left to continue traditional existence supporting the Khmer Rouge ideals. Minority groups were less tolerated unless they were prepared to assimilate into Khmer Rouge existence.

After mass executions, people were organised into cooperatives, thought to be influenced by the original 1958 style Chinese Great Leap Forward. Land tenure was organised into: "low level cooperatives" where land and agricultural implements were lent by the peasants to the community but remained in private property; "high level cooperatives" that abolished private property and the harvest became the collective property of the peasants; "communities" seen as advanced high level cooperatives with stricter organisation; and the fourth tenure type of state owned farms. Administrative control was divided into districts (*srok*), sub-districts (*khum*), cooperatives (*sahakor*), villages (*phum*) and groups (*krom*).

A combined army of Vietnamese and Cambodian rebel troops engaged in a Khmer Rouge style takeover tactic to bring down the Pol Pot dictatorship. Victory was declared by the Vietnamese when they took control of Phnom Penh on

January 7th 1979. Many Cambodians returned to subsistence farming and slowly the economy recovered and was able to export small amounts of surplus rice. During the 1980s Cambodian politics were being nurtured on the outskirts of the country frequently suffering civil attacks, while the Vietnamese retained rigorous control from the capital. Under Vietnamese rule the country became the known as the People's Republic of Kampuchea (1979 – 1989).

Vietnamese troops withdrew in 1989 and an independent government formed renaming the country as State of Cambodia. United Nations international aid stepped in during October 1991 with the Paris Peace Agreement that negotiated political and peace arrangements between China, United States, Vietnam, Thailand and Cambodia. Administrative control under the protectorate of the United Nations Transitional Authority in Cambodia (UNTAC) was created in the Agreement and a Supreme National Council was formed (CountryReports.org, 1997; Shawcross, 1994). All four Cambodian political parties signed the agreement and Prince Sihanouk returned to Chair the new State of Cambodia. Peace keeping efforts by UNTAC were ambitious and inadequately implemented and resourced. This generated more civil unrest and spurred Khmer Rouge groups to challenge the ineffective authority (Shawcross, 1994). The presence of 22,000 UNTAC troops caused disparities between Khmers and foreigners. The economic and administration situation worsened, heightening corruption, inflation, and desperate attempts in the private sector (Shawcross, 1994). UNTAC did however reinstate long overdue human rights, free speech and democratic behaviour.

In 1993 the Cambodian elections for the national assembly were held under UNTAC guidance, attempting to bring new order and governance to the nation. The results included appointed joint prime ministers, re-establishment of the monarchy under a new constitution, ouster of all military regimes and another renaming of the country to the Kingdom of Cambodia. Cambodian People's Party (CPP, previously Kampuchean People's Revolutionary Party, and evolving communist parties, WPK, PRK) and the FUNCINPEC (French abbreviation for National United Front for an Independent, Neutral, Peaceful and Cooperative Cambodia) shared political powers. During the 1990s foreign aid retracted from Cambodia as other global atrocities took place.

A coalition government was formed after a second UNTAC supervised election in 1998. Elections were thwarted with corruption, coercion and violent lobbying. More peaceful elections were held in 2003 forming a three party coalition government.

Today Cambodia remains an independent country with a free market economy. Political stability is still being restored. Although massive efforts continue to reform institutions and build confidence in the government, they are impeded by undermining of authorities and actions against the constitution. Cambodia is a United Nations member and part of the Association of Southeast Asian Nations (ASEAN). Cambodia successfully hosted the Heads of Government ASEAN Summit in Phnom Penh in November 2002. Sectors of governance, public finance, social development, demobilization, natural resource management, public administration, land management and trade continue to seek international assistance in the reform process. Much of Cambodia's development focuses on raising the national economic profile, through trade, investment, fiscal and administration reform. This was supported by entry into the World Trade Organisation (WTO) in September 2003. Political stability is also a priority for development efforts to achieve better regional economic integration, democracy and prosperity. Other development attributes include: institutional and administrative strengthening at the commune level; strengthening the private sector; military demobilisation; and improving forestry management (UNDP, 2001).

Cambodia remains heavily dependent on Official Development Assistance. Net ODA disbursements were $399.71 million in 1999, $466.81 million in 2000 and $471.84 million (provisional) in 2001, which represented roughly 60% of the national budget. Total donor pledges at the June 2002 consultative group meeting in Phnom Penh amounted to US$635 million.

At least 80% of Cambodians live in rural areas. Service and agriculture sectors are slightly higher than the industry sector, although the country's economy is heavily reliant on garment exporting. The informal sector is continually expanding to include surplus labour and trade that the formal market cannot

support. Education and health service are improving, yet facilities remain out of reach for large populations (UNDP, 2001).

6.2.3 Periods of Change in Land Use

1940s – 1975

Prior to independence, Indochina was a large naturally forested region. However, traditional agricultural methods of swidden (or shifting) cultivation significantly reduced this cover to secondary forests (Dobby, 1960). The climate and geological landscape of the region make rice farming ideal. The Mekong lowlands and Tonle Sap plains support large-scale agricultural activities in the central and eastern parts of the country. The Tonle Sap Lake and river system is a geographic phenomenon. On a naturally low-lying alluvial plain the Tonle Sap is fed and flooded by the Mekong river in a seasonally reversing flow. Between the dry and wet seasons, water levels rise and subside across an area more than triple the low season coverage. This creates distinctive seasonal variations allowing innovative cropping of 'floating' rice paddy varieties (Dobby, 1960). The middle Mekong river meanders through the lowlands to the east of the Tonle Sap before they converge, and the Mekong river continues south expanding into a large delta region in Vietnam.

Subsistence farming in the Indochinese region limited the circulation of commodities and money among peasant populations reflecting the feudalistic control (Dobby, 1960). Acreage and surplus rice production by the Mon Khmer (Cambodian majority) progressively increased in the lowland region as a result of colonial influence, advancing exportation and economic possibilities of plantation agriculture (Dobby, 1960). Maize, a common supplement to rice, was grown with other subsistence crops of sugar, root vegetables, cotton, and tobacco. Peppercorns and rubber were introduced largely for export under French occupation.

Khmer Rouge 1975 – 1978

Atrocities were caused during the failed attempt of the Khmer Rouge regime to re-engineer the Chinese Great Leap Forward. Overnight agrarian collectivisation was enforced, reorganising the society in every facet of life. The Khmer Rouge destroyed all formal land administration records and cadastral

plans. Land ownership was completely remodelled and reallocated to families migrating to the countryside in the form of strict 'cooperatives'. Urban areas were deserted. Abolishing previous irrigation and land use patterns, land was subdivided into 100m squares with an irrigation canal to be built every one kilometre. Lasting three years, the regime caused complete upheaval and debilitation of the country and its people. Recovery over the next decade was slow, ill designed and in many ways ineffective.

Peoples Republic of Kampuchea 1978 – 1989

The successive rule was assigned to the Vietnamese. A strong political drive dedicated efforts towards creating a socialist state. Immediately after the fall of the Khmer Rouge there was considerable appropriation of land, animals, seed and tools as the Cambodian people's dictators deserted them, people turned to privatisation. However Vietnamese rule gained more control and socialist priorities were re-enforced (Frings, 1993). Land under the new government was considered that of the State, therefore occupants had no right to sell, lease or use land for sharecropping. Plots could be 'borrowed' between each other or they could be bequeathed. Produce, however was owned by the producer. There were no taxes on produce and it could be sold to the State or on the 'free market' (Frings, 1993).

The Vietnamese implemented new models of land occupation to promote collective production in organised groups. "Production Solidarity Groups" or *Krom Samakki*, were formed. These combined between 10-25 families and in the upland areas smaller groups of 5-7 families (Frings, 1993). Production was to be divided equally and reasonably among workers and dependents, proportional to the work done (Frings, 1993). In general each labourer worked one to two hectares. Family plots were also distributed for dwellings and *chamka* (market garden plots). Family plots were approximately $1500m^2$ – $2000m^2$ depending on population density and land availability.

In other parts of the country peasant families rented land they had received from the state paying in terms of harvest. Ownership of animals played a significant role in mobilising families both with credit and farming opportunities.

Arable and cultivated land, the possession of animals and labour capacity of households significantly divided peoples' prosperity.

Reforms in 1984 saw land separated for *krom samakki* (production groups) and authorities to control grabbing of peasant's land (Frings, 1993). By this stage most available arable land was distributed and villages had resettled. Selected amounts were also put aside for public development (i.e. State public land). This "public" land was meant to give local authorities a source of income. However, in reality, produce of the land only went to officials and did not remain in the public domain. Even though agricultural productivity had risen to pre Khmer Rouge regime levels, the majority of the population were unhappy with the state of the land ownership and the imposed agricultural land use strategies. The failure of Vietnamese collectivisation was attributed to:

- economic factors including a lack of incentives of the distribution system and lack of governance to distribute land to peasants,
- incompetent leaders administering the Krom Samakki, undermining the system and not implementing it,
- lack of government efforts to develop socialist views, instead objectives were only aimed at increasing production,
- lack of Vietnamese influence in the field, and
- lack of cooperation from the people and inadequate tactics to enforce land system regimes.

Independent Rule 1989

In the course of just a few months major changes occurred as Vietnamese troops withdrew. The constitution was amended to stipulate that citizens had full rights to manage and use land and had the right to inherit land granted by the State for the purpose of living on it and exploiting land (East West Management Institute, 2003). All land ownership remained with the State, limiting access to full private ownership. Land cultivation rights were legalised, securing land for peasants. By April 1989 three types of land rights were recognised: ownership (*masetthi*), possession (*phoukea*), and concession (East-West Management Institute, 2003). Distributed land rights began and communally farmed land was quickly demobilized according to the old system that considered labour capacity

and land type. Land already cultivated by permanent tillers typically remained in the same possession. The attraction of salary work became a large factor for income seekers.

Institutional arrangements were rapidly enabled. The Department of Cadastre was established within the Ministry of Agriculture. This had the primary task of initiating the land titling process to eventually register Certificates of Ownership. An overhaul of the land administration system was attempted under UNTAC administration between 1991 and 1993. Poor governance and an underestimation of the efforts required lead to numerous failures. In 1992 a new Land Law (Immovable Property Bill) was promulgated, providing some definitive yet ambiguous statements on land tenure.

A critical feature of the new Land Law, in Article 1 and 2 stated that property rights that existed prior to 1979 were no longer recognised. However, contradictions started appearing between the constitution and Land Law in regard to property rights. Actions of possession, transferability, abandonment, alienability, succession and ownership were ambiguous.

The Land Law identified different types of land acquisition:

- private purchase from the state,
- private purchase from private owner,
- social concession grant,
- donation by the state,
- gift/inheritance by private owner,
- 'acquisitive possession' (adverse possession certificate, followed by ownership certificate), and
- recognition of indigenous right to communal ownership of land in perpetuity.

In 1994 a major change within the institutional structure raised the profile of land administration and titling by promoting the Department of Cadastre to a position directly under the Council of Ministers. In addition to this, the Inter-Ministerial Committee for Ethnic Minorities Development was established responding to the growing international awareness of minority group issues.

By 1995 records showed that only 10% of title lodgements received ownership Certificate Rights with no related survey activities. Ninety percent of the 4.4 million applicants for title only ever received a receipt to verify their prerogative for ownership with limited verification of authenticity.

Reconstruction efforts were severely affected when civil unrest broke out in 1996 destabilising the nation and government services. Unrest was eventually controlled in early 1999 when the Khmer Rouge surrendered to the Cambodian army and foreign forces. Order was restored once again.

In 1998 a second round of national elections were held that lead to the formulation of another coalition government and renewed political stability. The next three years of development depended on foreign aid, which focused on market-driven agricultural and rural development. There was a strong push to establish an effective legal framework for resolving land disputes which increased as land value and market activity rose. To assist land stability activities the Department of Cadastre was again relocated into the newly established Ministry of Land Management, Urban Planning and Construction. Here survey, mapping and registration tasks were performed by the Ministry and, similar to 1992 activities, private land title registration was employed as the preferred tenure security instrument.

A revised Land Law was promulgated in August 2001. Various sub-decrees, regulations, policies, and institutional arrangements were drafted and required revision to cover the full extent of land issues. The new Law is progressive in terms of provisions for community ownership of land, however, the interpretations of agricultural methods varied.

In June 2002 the co-financed Land Management and Administration Project (LMAP) officially commenced. The project aims to build Cambodia's land administration infrastructure (described in Section 6.3). The legacy of discontinuity in government and failures of past attempts to stabilise land tenure are major factors faced by the land administration design. On all fronts of coordination, governance, participation, and human and technical resources, this project is a mammoth and important task for the country.

Minority Groups in Cambodia

The majority of Cambodia's rural population are lowland Khmers who follow mainstream agricultural practices in rice cultivation and other marketable produce. Indigenous minority groups include the Khmer Islam, descendents from refuges of the Kingdom of Champa, and the Khmer Loeu, or 'upland' Khmers (LMAP, 2004b). The Khmer Islam typically inhabit villages only with other Cham and are located along the watercourses or inland (UNDP, 2001). Khmer Loeu people reside mainly in the north-eastern provinces of Ratanakiri, Stung Treng, Mondulkiri and Kratie. The Khmer Loeu are linguistically separated into smaller groups, including the Kuy/Kui, Phnong, Stieng, and Tampuan.

External pressures and internal conflict have had a large effect on lifestyle in indigenous village. Assimilation was encouraged in the 1950's when Cambodia became an independent nation and a strong sense of 'nationalism' was advocated. Other motivations to assimilate these societies with the Khmer majority came from pressure to engage in the market economy, the extension and integration of infrastructure and services, and compliance with decentralised authorities. Often groups were categorised as 'upland' or 'lowland' societies according to their adoption of market activities, monetary valuation, materialism, and location. Belief systems and features of social organisation better identify indigenous group characteristics, although there are more similarities than difference among the Khmer Loeu groups. Assimilation and external influences of lowland majorities are believed to be weakening the unity of indigenous societies (Crowley, 2003).

A significant difference between upland and lowland cultures is that most Khmer Loeu are animists of nature. Therefore people to land relationships among indigenous societies play a vital role in their existence. Spiritual relationships to nature and religious beliefs closely bind their lives with the sustainable use and well being of natural resources (LMAP, 2004b).

Household structures vary from large multifamily longhouses to small single-family structures. Customary forms of land adjudication exist within the upland villages and are rarely interpreted beyond this level to formal political organisations. Guided by traditional beliefs, authority and decision-making in most minority groups are vested in the village elders or headman. Matrilineal

inheritance systems for property rights are recognised, however in reality the male dominates control and uses the woman's possessions (LMAP, 2004b).

Land use activities involve rice cultivation, rubber plantations, hunting, fishing and gathering of forest products to supplement dietary needs (UNDP, 2001). In upland regions rotational swidden agriculture using slash and burn techniques for chamka land clearing is the most common method for cultivating the main crop of dry or upland rice and other varieties of plants (UNDP, 2001). After a few years the family moves on to another plot within the customary village lands and the chamka plot is left fallow for revegetation. Land fertility is restored over a number of years and the farmer may return, repeating the cycle. This agricultural method is often strongly opposed. However, in areas of low population density, the environmental balance can be sustained for centuries (LMAP, 2004b).

It is important to note that legal statements are gradually recognising indigenous Cambodian status. Article 32 of the Constitution affirms that all Khmer citizens (including Khmer Loeu/Leu and Khmer Islam) are equal before the law, enjoying the same rights and freedoms (East West Management Institute, 2003). Amidst the fighting in 1997 an Inter-Ministerial Committee for Ethnic Minorities Development drafted the 'General Policy for Highland Peoples' Development'. These policy guidelines reconfirmed provisions in the Cambodian constitution for highlander people to have the right to their own culture, beliefs and languages, and participation in government. The 2001 Land Law also specifically recognises indigenous groups. This has the potential to make a positive contribution to the legal status of tenure for communal land and forest use by indigenous communities.

Common to most forest dependent populations around the globe, Cambodian highlander groups suffer from increasing occupation and use pressures for forest land and resources. Enforcing stricter boundaries on swidden cultivation, declaring conservation areas of traditional forest land, and intensifying production through forest plantations and logging concessions seriously threaten the lifestyle in these communities.

The people to land relationships among upland Khmer groups are complex. Development must consider strengthening and protecting indigenous people's access to these resources with a focus on assisting highlanders to protect their basic land rights and traditional infrastructure for development (LMAP, 2004b). Numerous legal aid, social and environmental development groups and eco-tourism programs are committed to helping minority groups. Research and consultative processes initially developed knowledge of customary traditions. More recently these efforts concentrated on resolving development issues according to traditional practices and finding solutions to legally secure tenure.

6.2.4 Current Land Issues

Land issues that Cambodians face today are reminiscent of the ravaged social fabric and landscape of the past. Seventy five percent of the population remain engaged in subsistence farming (CIA, 2005). The issues summarised below are important to consider in development strategies particularly for land administration, but they also apply to other sectors. These issues are not in order of development priority as this is dependent on policies used by different sectors and stakeholders.

- Major environmental disturbance in terms of habitat loss and a decline in biodiversity are caused by illegal and commercial logging and strip mining for gems. These operations were largely exploited during the early 1990s by Chinese and Vietnamese foreign investors. Cambodia has one of the highest forest loss rates in Southeast Asia from logging, shifting cultivation, conversion to plantation, and forest fires (ADB, 2002). These activities cause:
  a) the destruction of traditional 'spirit forests' undermining minority cultures and weakening belief systems,
  b) coercion of village leaders and exploitation of village lands by forest business deals and forestry concessions, often because of a poor understanding of land rights,
  c) serious increase in soil erosion for rural areas,
  d) reduced access to timber and non-timber forest products for all populations, not just forest dwellers,

e) highly exploitive methods of resource extraction used particularly where unrestrained and illegal logging operate,

f) declining access to land for swidden agriculture and an increase in weeds and pests, and

g) ultimately dispossession of traditional land and forests causing impoverishment.

- Landlessness is a major problem primarily due to the finite distribution of arable land after 1989 when collectives were finally subdivided. Those suffering landlessness are refugees, ex-Khmer soldiers, fishing families, and families who sold land to escape hunger or sickness.
- Landlessness is also a problem for increasing rural populations as families continue to grow, however there is very little arable land available. Further fragmentation of plots increases between and among families.
- Poor and exploitive land use management has caused land infertility and declining rice yields. This has induced changes to crop types and cropping patterns without appropriately informed decision making. This also causes encroachment and the destruction of other natural resources such as fishing and forestry resources.
- Lowland Cambodians are starting to migrate into upland regions in search of arable agricultural land, putting pressure on highland communities. Land grabbing and encroachment issues are high these areas.
- Largely uneven land distribution, where the poorest 50% of rural households hold an estimated 10% of the land.
- Inability to tap into the economic success of Thailand because of national instability. Efforts to draw Cambodia into the market economy such as through paddy rice cultivation have been unsuccessful. This was also not helped by the devaluation of rice exports, which were often high in quantity but low on financial return.
- Resettlement of people near facilities, such as potable water, health centres education etcetera requires better coordination.
- Distress sales of land are causing landlessness, poverty and break down ocial organisation.

- A decline in fishing stocks, largely from commercialised fishing and the use of illegal and destructive methods results in more people wanting to return to the land.
- Education and understanding of legal rights to land ownership and occupation are very low and cause major disparity and disadvantages for those uninformed and poorly educated.
- The commencement of LMAP brought other issues to the fore:
  a) competition for full ownership, as opposed to occupation,
  b) competition of traditional household ownership against commercial use and foreigner investment,
  c) inadequate address of traditional understanding of ownership and possession through private titling, where both appear to be exclusive, transferable, enforceable, inheritable and enduring,
  d) complexity in overlapping claims when titling ancestral domains,
  e) unclear land tenure classifications succumb to the pressure of economic value as opposed to social worth, often favouring the government or elites rather than the people working the land,
  f) the need to identify the needs of ethnic minority group and methods for providing secure tenure and access to resources,
  g) land disputes due to unsettled ownership and boundary demarcation, and
  h) the ineffective and ambiguous legal and policy framework.

6.3 National Land Management and Administration Project

6.3.1 Project Overview

A major tool in Cambodia's redevelopment is the implementation of the national Land Management and Administration Project initiative. Reconstruction efforts in building an effective land administration system for Cambodia began after the Cambodian Government sought assistance for a land policy, administration and management development program in 2000. Multilateral support from The World Bank, German Government (GTZ) and Finnish Government (FINNMAP) accepted this challenge and commenced operations in June 2002. LMAP is the first five year phase of a 15 year Royal Government

Land Administration, Management and Distribution Program (LAMPD). This first phase is expected to cost 34.9 Million USD.

The broader program objectives aim to reduce poverty, promote social stability and stimulate economic development. These will be achieved by:

- Strengthening land tenure security and land markets, and preventing and resolving land disputes;
- Managing land and natural resources in an equitable, sustainable and efficient manner; and
- Promoting land distribution with equity (LMAP, 2004a).

The immediate project mission statement is:

> To secure land tenure rights, improve the land administration system and to develop capacity for land management, from which the entire population of Cambodia will benefit. (LMAP, 2004a)

LMAP also aims to address five major concerns of the national poverty reduction strategy: (1) rising land inequality, (2) landlessness, (3) lack of secure tenure, (4) increasing conflict related to land, and (5) growth of illegal squatter settlements in urban areas (LMAP, 2004a).

6.3.2 Project Component Details

The project was designed according to five core components (Table 8) with assignment tasks integrated throughout key departments in the Ministry of Land Management Urban Planning and Construction. The project is coordinated by a Central Planning and Management Office and supported by a Technical Advisory Team and a number of foreign experts.

The functions of Component One support the core principles required in establishing a strong and effective land administration system for the country. The coordination of reliable land policies and a comprehensible regulatory framework has widespread consequences across multiple government agencies on all land related activities, specifically including: State land identification, classification and mapping; housing policy development; Social Land and Economic Concession policies; indigenous land rights registration; and road corridor

registration. These issues were addressed in the very early stages of the project design, setting up a council for formulating a State Land Policy and Land Law drafting and reform, which were carried prior to the commencement of the project in 2002. A dysfunctional legal system can have a crippling effect on land administration as it undermines tenure security and investment. Therefore significant effort and incentives are applied to raising the integrity and functionality of the legal system. This also aims to increase foreign and commercial investments.

Table 8 - Project Costs and Components

Component 1	**Land policy and regulatory framework** (US$2.8m)
	Development of the capacity of the Secretariat of the Council of Land Policy Formulation of key policies for Land Management and Administration Development of drafting and legal instruments Dissemination of policies, laws and procedures
Component 2	**Institutional development** (US$6.4m)
	Long-term institutional development of the MLMUPC at all levels Project management Development of land management and administration education program Development of private surveying and industry
Component 3	**Land titling program and land registration system** (US$21.4m)
	Information dissemination and community participation Systematic land titling program Sporadic land titling program Development of a modern land registration system
Component 4	**Strengthening mechanisms for dispute resolution** (US$1.7m)
	Strengthening the National Cadastral Commissions Strengthening the Provincial Cadastral Commissions Legal assistance for disadvantaged
Component 5	**Land Management** (US$2.6m)
	Clarification of procedures for defining different classes of land, such as forest land, protected area land, private land, private state land, and the like Procurement of aerial photographs and satellite images as needed Preparation of Land Classification Maps

Institutional strengthening is recognised as a fundamental component for implementing LMAP and is estimated to absorb almost 20% of the project budget. Low levels of capacity and efficiency within the land administration activities required significant growth, particularly within the Central Planning and Management Office (CPMO). Capacity building to help achieve long term

sustainability was given very high priority in the project design. Wide scale capacity building was essential through a number of areas: basic in-house survey training programs; establishing a university degree; in-country skills development in English language, report writing, and dispute resolution; and overseas training in financial management, project management and monitoring, facilitation and moderation. There was also the need for major resource strengthening, both technical and human, in Ministry departments at the Provincial and District levels to assist in the coordination and processing of systematic survey registration. At present this occurs on an as needs basis as the project is implemented in stages around the country provinces.

Component three, the most costly component of the project, taking up 60% of the funding, will perform extensive operational functions in surveying, mapping and land titling. This involves establishing an automated national land registration system for land transactions and issuance of first time land titles correlated to digitised cadastral surveys and national mapping. Systematic and sporadic titling programs are employed in parallel with public awareness campaigns. Survey and registration activities are community based in rural areas requiring very basic staff training of field teams. A hands-on approach in the rural areas uses aerial photography and sketch mapping overlays for parcel identification. This process relies heavily on villager participation. Initial village land titling information campaigns are held and rudimentary information is collected for Village Land Profiles. Sketch maps provide a snapshot description of people to land relationships in the village. One month later the survey team return to the village to conduct mapping, small scale adjudication, and to witness and register title applications. Systematic registration is often conducted simultaneously with inventory land management based activities where capacity and coordination in government activities allow. Registration and mapping information is then submitted to the Provincial cadastral office for computerisation and entry into the registry database. Rural title registration procedures of agricultural and village house plots are conducted differently to urban land titling because of the different set of challenges of each scenario. Urban titling procedures were more technical and precise, comparable with surveys conducted in urbanised developed western

nations. Details of urban land titling procedures were not investigated as part of this research.

Photogrammetric methods underpin many of the survey, planning and land management activities. These and other technical activities are chiefly supported by international expert assistance such as densification of the geodetic network required to support the production of aerial photography and orthophotography used in systematic registration. Other activities that require extensive development and training programs include: systematic and sporadic land registration procedures; field survey teams in the use total stations and GPS units; cadastral data management using GIS software; orthophoto and cadastral map production; and land adjudication and facilitation training for those working with people in the community.

The fourth component, dispute resolution, is a serious issue for the design of the Cambodian land administration project. As a post conflict nation, numerous disputes were caused by social anarchy and the more recent reclamation of land after major resettlement. LMAP established a Cadastral Commission as a government, not legal, procedure to deal with conciliation and dispute resolution based on the land law and policies. Disputes are resolved in a three process system and only referred to the courts if unresolved after the third step. This commission is significant for engendering public confidence in the government system and the project integrity.

The fifth component concerns stakeholders from all sectors in the classification of land use and land management boundaries across the country. The inventory and classification of land are large tasks complicated by discrepancies in management roles, user rights and boundary delimitation between government departments and communes and villages. Classification of land also involves the allocation of recently approved land distribution through Social Land Concessions, and the approval of Economic and Agricultural Concessions. The Participatory Land Use Planning (PLUP) initiative improves land use and management at the grass root level and is based on community mapping principles. This is described in detail in section 6.3.3.

Other complementary project agreements play important roles in strengthening land administration and management development supported by separate agencies and funding bodies. These projects include:

- Agricultural Sector Program on Revising and Rationalising Land Legislation (Asian Development Bank) – legal reform;
- Decentralisation Program for commune mapping based on orthophotographs (Asian Development Bank) – strengthening commune capacity for development;
- Natural Resource and Environment Program (DANIDA) – inventory mapping and development planning;
- Seila Decentralisation Program – managed by the Provincial Rural Development Committee for implementing local planning processes, such as the Seila Progam for Land Use Planning Units / Land Use Management Units (MLMUPC and Handicap International) that supports capacity building in mapping and development planning;
- Rural Development Project (IFAD and WFP, GTZ and AusAID) – infrastructure and agricultural development programs; and
- Village Development Committees (VDC) – organisation of village councils, planning and micro-credit schemes.

The LMAP project claims to infiltrate Cambodia's national development from policy and legal reform, through institutional organisation and capacity building, to villagers receiving land title certificates at the grass root level. The project involves a complex arrangement of activities many being introduced for the first time using modern equipment and skilled technicians. This long term project requires intensive efforts to establish the foundations of an effective land administration system. Capacity building and technology improvements aim to give LMAP long term sustainability and flexibility. A significant factor contributing to the initial project progress and success is the positive and proactive Government support.

6.3.3 Participatory Land Use Planning Tool

The Participatory Land Use Planning (PLUP) tool was developed through component five of the LMAP project as a precursor for land management and land registration within villages. This is one of few initiatives within land administration projects that operate fundamentally from the ground up and rely on village participation and decision making. PLUP was a planning process that jointly decided on village boundaries starting among villagers, commune councillors and stakeholders. As a village-based program, PLUP aimed to understand and clarify local level land use arrangements involving state, communal and private tenure identification as well as land use, management and protection of the natural resources. These PLUP processes largely considered decision making for future land use and tenure, working with a multi-disciplinary team formed from representatives of several line ministries.

PLUP creates transparency, communication and decision making about all land management issues to the local level where it will have the greatest affect. The bottom up approach of PLUP has a legal, institutional and natural resource context that works closely with the socio-economic situation of local populations. The PLUP tool, with its processes detailed in Table 9, is being implemented by various government agencies and non-government organisations to facilitate development planning processes that hinge on public awareness of natural resource use and sustainability. All stakeholder interests, optimal resource opportunities, tenure aspects and management capacities are considered in the process towards the production of a village/commune map and a set of rules and regulations pertaining to the various tenure arrangements.

> "Participatory Land Use Planning is an iterative process based on the dialogue amongst all stakeholders aiming at the negotiation and decision for a sustainable form of land use in rural areas as well as initiating and monitoring its implementation." (PLUP Team, 2003)

During the planning stage, proposals for the future land tenure and land use of all parcels are deliberated. During this time land conflicts among villagers or with outsiders are most likely to arise and can be prepared for resolution prior to land titling.

Table 9 - Stages of PLUP Implementation

1. Preparation of Field Work	PLUP Facilitation Team organised Inform Local Population Introductory Meeting
2. Situation Analysis	Participatory Appraisal and Information Collection Socio-economic Analysis Institutional Analysis Land and Natural Resource Use Patterns and Conflicts Preliminary Feedback Transect Walk and Mapping Village Workshop
3. Screening of Options for Development	Identify Land Use Changes Optimal Suitability evaluated
4. Creation of Management Committee	Representatives elected
5. Plans Prepared	Future Land Use Plan Village Regulations Management Plans for Communal Areas
6. Land Use Plan Submission	Application for Endorsement and Approval
7. Implementation of Action Plans and Land Allocation Programs	Extension services required Conflict Resolution engaged
8. Monitoring and Evaluation	Monitoring of PLUP team, extension programs, village NRM activity plan, land use changes and tenure system and overall impact of PLUP.

The success of the PLUP tool led to its formal application across planning initiatives for social land concessions, mining areas, conflict resolution, community based natural resource management with hill tribe and minority groups, the negotiation of protected areas, and land use planning in the intensive and competitively used Tonle Sap region. PLUP is also under consideration for use in Commune Development and Investment Planning.

PLUP teams require a multidisciplinary approach to articulate the national regulations and policies of each department during facilitation. The PLUP process is quite intensive and is rolled out over eight stages (Table 9). The program is initially facilitated by trained PLUP Teams and eventually villagers and commune elect representatives are educated and they become responsible for implementing and sustaining the development scheme. As members of the village, these representatives have a vested interest in their own development.

This initiative is similar to other natural resource management activities however important ties with LMAP provide more incentives to guarantee longer

term support and security of invested efforts. For example there is a close resemblance of PLUP processes in Community Based Natural Resource Management (CBNRM) activities. PLUP activities are based on whole village planning while CBNRM is specific to aspects of NRM in localized areas (i.e. a forest or lake) and seeks to improve CBNRM capacity within villages for improved environmental management and protection.

The scale of PLUP is both large and small, working with people in villages to effectively plan the allocation and use of village resources for sustainable development. PLUP draws attention to immediate management priorities and control in the hands of local beneficiaries. Raising local management capacity in the long term aims to reduce demands on government services as villagers regain self reliance. PLUP also assists district and provincial development planning. In the national context PLUP facilitation is guided by national policy and legal frameworks, supported by technical guidelines and approvals, and assisted through commune committees directing services from line ministries, NGOs and other project work.

Ultimately PLUP objectives aim to increase planning competence, individual responsibility and autonomy in decision making and the organisational capacity of villagers, which reflects a new approach to solving land use and resource management issues.

6.4 Village Case Studies Outline

The three village sites, Che Meakh (*Chi' Me'hck*), Srae Srama (*Srey Sra'moh*) and Ou Ta Prok (*Oh Ta Prok*), were chosen based on accessibility, village development levels, natural resource and social characteristics, occupational practices, and settlement patterns. The method adopted was to interview a large number of households in each village to obtain a thorough understanding of the diversities and trends in resource use and social behaviour. The studies aimed to capture common subsistence rural land use behaviour of the Khmer majority, lowland Khmers, therefore ethnic minority groups were avoided.

Approximately 30 households per village were randomly interviewed; this sampled between 10 and 25 percent of the village population. Data was collected

at the end of rice harvest in the dry season between November and January. Prior to harvest, there are often food shortages as rice supplies have run out and, depending on the seasons' yield, rice rations continued. While all villages were primarily rice dependent farmers, each had a unique village make up, landscape and social organisation as outlined in Table 10.

A large proportion of the rural population reside around the fertile and resource rich Tonle Sap Plains. Two villages of different proximities to the Lake were sampled. A third village more closely represented upland rural activities.

The following table (Table 10) uses census statistics, interview findings, and observations to set a benchmark for standard village comparisons and outlines factors that influence occupation, land and resource use and village management patterns. Transect walks or day trips to explore extents of the village area made a significant impression in understanding different resource use and management practices. For classification purposes a village is an administrative area; it may include housing settlement area, water holes and rivers, forests, agricultural land, roads and other parts of the landscape. Households often, but not strictly, congregate and build houses close together. Throughout these case studies this is termed the residential settlement area or village settlement.

Table 10 - Village Description and Statistics

Figure 19 shows Case study areas, pg.171)	CHE MEAKH	SRAE SRAMA	OU TA PROK
Province	Kampong Thom	Kampong Thom	Pursat
District	Santuk	Santuk	Krakor
Commune	Kor Koh	Tii Poh	Ou Sandan
Households*	245	124	193
Population, growth rate % (past 5 yrs)**	1140, 11%	722, 19%	936, 2%
Settlement	1979/80	1996	1983/84
Road Access (closest town)	On National Hwy 6 (bad road), Buffalo Tracks to Pongro, (18km, Kampong Thom)	Tertiary Road, 15kms off National Hwy 6 (bad road), (30km, Kampong Thom)	Earthen road access, 5kms off National Hwy 5 (bad road), (40km, Pursat)

	CHE MEAKH	SRAE SRAMA	OU TA PROK
Education Av Grade Max Level in Village % of households % >Grade 6 school <3km	4 11 65% 16% 2 primary (1 in village), 1 secondary	3 7 41% 1% 1 primary (in village), 1 secondary	6 12 61% 7% 1 primary, 1 secondary, 1 Wat
Health Care	Medicine man and health clinic <5km	Medicine man and health clinic >10km	Health clinic <10km
Number of Rooms **	72% - 1 room 25% - 2 rooms 3% - 3 or more rooms	98% - 1 room 1% - 2 rooms 1% - 3 or more rooms	71% - 1 room 28% - 2 rooms 1% - 3 or more rooms
Livelihood Activities - 1. Primary 2. Secondary	1. Rice Cultivation 2. Chamka Crop Production & Other	1. Rice Cultivation / Coal Making 2. Rice Farming & Other	1. Rice Cultivation 2. Fishing & Other
Natural Resource	State Land, Tonle Sap tributary	Concession Forest, State land	Tonle Sap Lake and Plains
Land Tenure Dependency	Private State Land Communal	Private Communal State Land	Private Floating Village
Development	High / Very Active	Low / Active	Medium / Active

* One household is considered members of a family who eat together. A new family may still share living quarters, but eat separately and would therefore be considered another household.

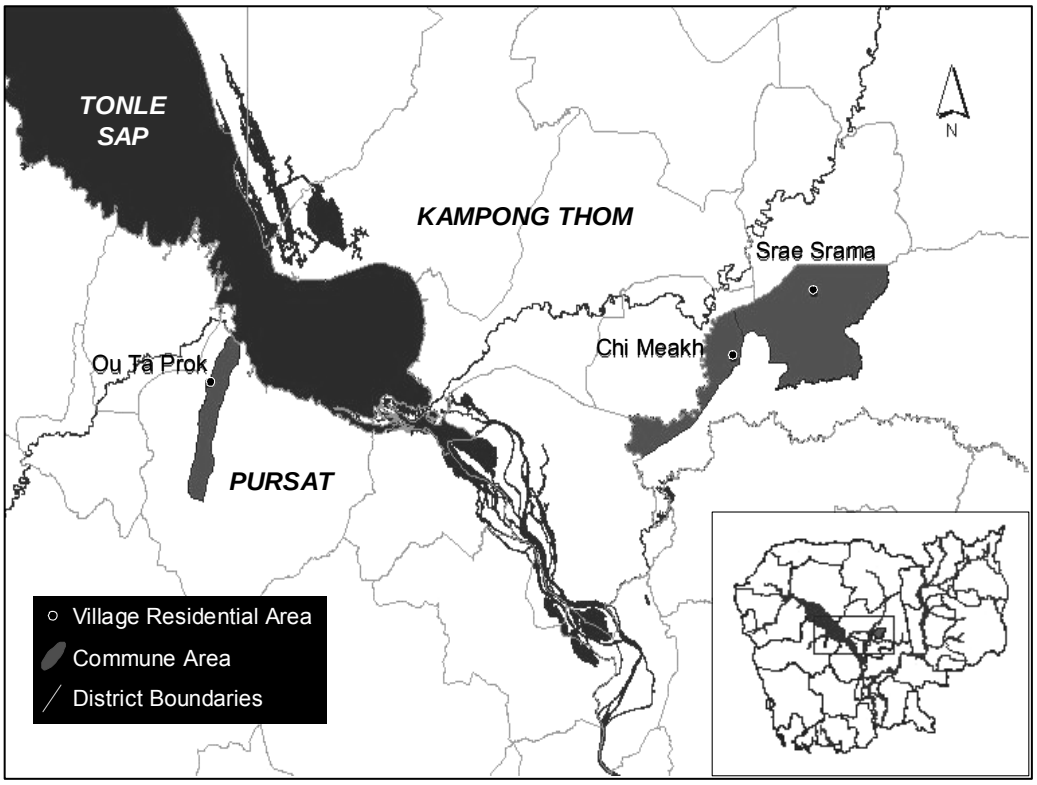
** Based on 1998 National Bureau of Statistics census data.

Each village case study is described using the following structure:

Village Profile:	Livelihood Landscape description from Transect Observations Settlement history Tenure arrangements
Village Development Activities:	Actors involved Project activities (Understanding of development integration and assistance)
Land and Resource Tenure:	Fields - Lowland / Upland / Chamka / Other Fishing (Activities, productivity, management)

Village Concerns:	Economic Social / Political Environmental

Figure 19 – Case Study Village Map of Inland Cambodia



6.5 Case Study Site 1 – Che Meakh

6.5.1Village Profile

LIVELIHOOD

Che Meakh Village was centrally located approximately 140km north of the capital. The primary residential settlement area was situated alongside one of Cambodia's main national highways. Che Meakh had an estimated population of 1,140 in 2003 an increase of 11% from the previous five years as a result of expanding young families.

At the base of Santuk Phnom (Santuk mountain) the main residential village area was in close proximity to a number of facilities: two primary schools, a secondary school, a district medical clinic, a trained medicine man who lives in the village, a local food and goods market, a Wat in the next village, Wat Santuk

Phnom Tourist site, and transport and trade opportunities along the national highway route between Phnom Penh and Kampong Thom. Two thirds of the sample population were given the opportunity to study and 16% of those studied beyond grade 6. A few people were fortunate to have studied in Phnom Penh. Depending on the financial status of the family, seeking of higher education and employment opportunities meant one, possibly two members of the family, would relocate to Phnom Penh. This often required other family contacts to help support them while in Phnom Penh. If they were working, there was often an obligation to return with money for the family.

Rice cultivation is the predominant source of livelihood for people of Che Meakh. A number of villagers are also active in diversified cropping and other income sources (Table 11; Appendix 4 – Graph 1). This variety in livelihood opportunities is directly related to their prime access to trade along the national highway. For 30% of people in Che Meakh, rice cultivation was a profitable activity and additional labourers were hired for harvesting in previous years. A drought since 2001 left most people without enough rice for families for the year. Rice cultivation was supplemented by fishing and the sale of vegetable crops utilising non rice-cultivated upland areas. Subsistence fishing was carried out by approximately half of the villagers and surplus stocks were traded at the local market. Other ventures were performed to overcome shortages for those with little or no land, and to increase income potential for others, including bicycle repairs, metal collection, ice-cream selling, and motodop driver (Table 11).

Crops Varieties	Cassava Mung beans Seasame Watermelon Cashew nuts Cucumber Eggplant Sweet potato Chili	
Employment Opportunities (x) = number of interviewees involved in this type of work	House Stump (1) Metal Trading (2) Village Shop (2) Catch eel/snake (3) Phnom Penh work (5) Small Business (4) Lottery ticket seller (1)	Fish Trader (2) Icecream seller (1) Labourer (3) Motodop (1) Rice Wine (1) Social Work (1)

Table 11 - Che Meakh Livelihood Opportunities

All villagers have access to a well or water pump within 100m of their home and a number of these people also own water filters. Drinking, cooking, bathing, and watering facilities were communal. Recently installed filtered pumps and

wells were formally assigned to villagers for their use, using agreements signed by thumbprints. It was socially accepted that privately owned wells were open for public use. Overall infrastructure remains very basic around the village with no electricity or running water, and earthen and extremely sandy village paths and cart tracks. Housing ranged from large and high stilted, reinforced structures with timber floors and corrugated iron roofs, to small, low and minimally constructed shelters with bamboo flooring.

LANDSCAPE / TRANSECT OBSERVATIONS

The village territory is segregated into five separate areas within the Kor Koh commune boundary, extending from the base of Santuk Phnom to the eastern banks of the Steung Slap (Slap river).

Santuk Phnom State land, previously old growth forest, was recently exploited by logging and mining activities that exposed loose sandy soils. The gentler mountain slopes are now sparsely covered with secondary forest and sporadically interrupted by the cultivation of fruit tress and vegetable crops kept by Che Meakh residences lining National Highway 6, approximately 2kms away (Figure 20).

Across the highway and through the main village housing settlement the village area opens out past a primary school to expansive area of rice fields. Here two large, yet fragmented areas of Che Meakh villager-owned low lying rice fields are located between 2 and 4kms from the main residences (Figure 20). This area is not very fertile and generally returns low yields. A number of parcels are not fertile enough to harvest and remain uncultivated grass lands in hope that time will help restore soil fertility. These fields are accessible along small dykes and earthen cart tracks extending almost 8kms until reaching a tributary of the Tonle Sap river system, the stueng Slap. Close to the river fertile rice growing land is intensively cultivated while small areas of higher ground are left idle for holding cattle during the wet season. These higher ground areas are common property or titled as ‘Village’ property. Along the banks of the Slap river, larger trees and mangroves provide habitat for animals and shelter and resources for the settlement of Pongro, still classified as Che Meakh village (Figure 20).

The riverside settlement is accessed through the village Wat to the eroded banks of the river where a small settlement of permanent shelters are built on stilts with some small gardens and animal pens. Only two concrete wells were constructed in Pongro, one for the Wat, the other in the centre of the settlement area.

The fifth area of Che Meakh village is located more than 10kms from the main residential village. The remoteness and fear of conflict with other villagers are strong safety concerns preventing villagers visiting this area. Over the past decade very few people have attempted to reclaim this land. The area lies south east of banks of the meandering Steung Slap in an area subject to intermittent flooding from the Tonle Sap river system.

Figure 20 - (left to right) Secondary forest and cashew trees looking towards Santuk Phnom; Cultivated rice fields; Stueng Slap in Pongro.

SETTLEMENT

Che Meakh was settled along the national highway in the 1950's after the French-influenced government urged people to relocate from the riverside village of Pongro. Thieves were a major threat and the village was not secure due to its isolation and poor accessibility. Che Meakh remained the homeland before and after the Pol Pot regime for a large percentage of villagers. It also opened up slightly for newcomers to establish homes and property as people were lead out of collectives at the end of Pol Pot. More than 90% of the Che Meakh's population reside permanently in the main village area (Figure 21: Appendix 4 – Graph 3).

Figure 21 - Main Settlement in Che Meakh (left); Permanent and temporary shelters in Pongro (right)

The 10 or so permanent households in Pongro survive on fishing and rice farming and support five practising monks at a small Wat in the village. Pongro village settlement is approximately 7kms or a 6 hour cow or buffalo cart ride from the main settlement. During ploughing and harvesting cycles of rice cultivation Pongro becomes a very active place when 80% of the permanent population sends households members to temporarily migrate to Pongro for easier access to rice fields and fishing. Not all household members will make this journey particularly school aged children and their carers. During the wet season it is possible to access this area by boat across the rice fields. Between seasons access is very difficult as the water drains and cart tracks become mud. The dry season reveals underlying sandy soil for carts, motorbikes and 4WD cars or trucks.

Permanent residents of Pongro have enduring and agreed ownership to land on sections of the riverbank. Unofficial but long standing agreements between residents, relatives or friends, permit construction of temporary shelters on their house plots during ploughing and harvest (Figure 21, right). Year to year migrational arrangements scarcely change and people reconstruct shelters on the same plot, often preparing small subsistent vegetable plots on the river banks for their stay. Pongro village remains culturally significant being the 'homeland' for the majority of villagers in Che Meakh.

TENURE ARRANGEMENTS

Present day people to land relationships in Che Meakh are the result of a combination of land redistribution and resettlement attempts by various authorities:

- French administered Government – responsible for settlement of privately owned house plots that recently obtained full private titles registered through the Ministry of Lands, LMAP team;
- Vietnamese ruling Government – responsible for rice field distribution to villagers (not necessarily only Che Meakh) facilitated by Commune authorities. These were also issued with full private titles registered through the LMAP team;
- Village Chief agreements – responsible for approval of ownership claims to common property within the village. These were supposedly registered to the village as Communal Village Property but often the areas received individual private title during the LMAP registration process possibly caused by coercive figure heads (this was confirmed when checking people's land titles and the registered holder);
- Provincial Governor authorised concessions – idle and overlapping lease concession agreements for use of upland areas by Ministries of Agriculture, Environment, Tourism, and Mining.
- Informal open access – informally acquired access to and use of natural resources in unoccupied upland areas by people of surrounding villages is common ;
- Informal family group area claims – traditional use of common property areas (Pongro) to benefit individual family groups, informally agreed through traditional permanent and temporary occupation, with registry identified parcel boundaries;
- Informal natural resource use and access – the Slap river through Pongro is state public property of the Water Resources Department in the Ministry of Environment. This river acts as a border between two communes. Within Che Meakh Village certain areas of the river are subject to use regulations set by a village natural resource management plan. Illegal private use and fishing practices to support tradable fishing in certain parts of the river cause disputes disrupting subsistence fishing.
- Individual ownership claims (user rights) – originally acquired through informal occupation, the possession of upland State Reserve area, marketable

property, however no ownership or use record is available, and State ownership prevails.

6.5.2 Village Development Activities

Che Meakh villagers are recipients of a number of development initiatives for securing assets, and overseeing sustainable development and resource management. Small NGO funded projects support basic infrastructure improvements through well construction, water pump installation and provision of water filter facilities for the village to ensure safe drinking water is available. UNICEF, Red Cross and the World Food Program responded to the needs of this village for emergency relief during food shortages from environmental adversity, including flooding and drought. There was village facilitation to develop a micro-credit program and Village Development Committee. These activities require formally organised committees represented by village members who then become accountable to chains of command from Commune Councils through to Provincial authorities. A micro-credit program as part of the VDC was mentioned by a number of households, but this was not the preferred system for acquiring funds (Appendix 4 – Graph 9).

Registration and surveys for land titling were conducted in Che Meakh in the middle of 2003 as part of the systematic titling scheme by the National Land Management and Administration Project land titling team. The majority of villagers received land title certificates for their government distributed house and rice plots. All other land use arrangements were ignored, including established agricultural crops in upland areas. Certificates of title were personalised with the owner's thumbprint, stamped with a guarantee from the central registry and signed by the Director of the Provincial Cadastral office. The name on the plot title was not gender biased but remained in the family line of inheritance, whether it was from the female or the male side. There was a general understanding about the significance of holding a certificate of title for tenure security however within a few months since distribution of title the records were already out of date because villagers were not notifying authorities of transfers. Certificates of title and a Family Book record are among very few documents that each household stored securely. Most families have limited possessions, but a few households are

fortunate to have family photos and others displayed political pictures and propaganda.

Since approximately 1998, Che Meakh was involved in a number of environmental programs to encourage more sustainable use and management of natural resources. An inventory of natural resources was conducted as part of a natural resource management component of the Integrated Rural Development Project from the Provincial Rural Development Department. Supplementing the inventory activities was the formation of Che Meakh's Natural Resource Committee in 2001 coordinated by the Fisheries and Natural Resource Management Departments within the Ministry of Environment. The committee is responsible for the protection and management of natural resources within the village area. Comprising of five nominated or elected village members, monthly meetings were held to discuss and disseminate information about the rules and regulations of natural resource use in the village. Important issues were then raised at Commune Council meetings to be investigated by higher authorities. Monitoring field trips of the area were conducted with the Provincial Natural Resource Management (NRM) Team to enforce regulations. Effective enforcement required the presence of high level authority and a vehicle to help confiscate equipment and reach remote places. Committee members could raise issues with offenders in the village and when the issue was not resolved, a chain of higher authorities would be approached: Village Chief, Commune Chief, Provincial NRM Team, and then the police. The village committee has limited powers and is primarily used to raise awareness and educate in sustainable use of natural resources within the village, including erecting a sign in Pongro to notify villagers of regulations and infringements.

6.5.3 Land and Resource Tenure

LOWLAND LAND USE

Lowland rice is the main crop grown in the area. Villagers privately own on average four plots per household although intensification and productivity were not very high, many plots were not cultivated during 2003, and that year's harvest was poor quality (Appendix 4 – Graph 4). Depending on the prediction of rain, deepwater or seasonal photosynthesising rice crops are cultivated however,

unreliability in these predictions lead to failed crops from 2001 to 2003. The land was not irrigated and therefore produced only one crop. Depending on the capacity of the owner, a second vegetable crop may be attempted, such as watermelon however this was very labour intensive and was generally not carried out by people of Che Meakh. Land near Pongro is worse quality for a larger percentage and is commonly left fallow. However areas close to lakes and the riverbank are good quality for deepwater rice.

Lowland rice plots were individually identified by small dykes or grassy vegetation. These plots have a private ownership type relationship. Most plots, although legally transferable since LMAP title registration, remained within the family and were subdivided for the benefit of maturing children and their families. The value of these plots was not known by most villagers. There were no recent sales, only inheritance transfers; thus there were no examples to provide fiscal values.

Village level dispute resolution was often ineffective in dealing with land use and ownership conflict. This was illustrated when a 1ha common property parcel (seasonal lake) was registered under individual ownership. Previously this land provided the village with a seasonal waterhole for cattle. Since being fenced off, it was used for cultivating rice and was recently registered with a private title. Villager complaints fell on deaf ears. Similar problems had occurred with other communal resources with severely limited ability to defend their user rights.

CHAMKA LAND USE

There is limited enforcement of restrictions on State owned upland areas. Plots were often acquired and transformed into chamka plots through non-designated clearing of secondary growth forest (Appendix 4 – Graph 5). People to land relationships on chamka plots were primarily individual and the plots were used mainly for cash crops. Recognition of ownership was achieved through continued occupation by an individual or household. Occupation and user rights were secured by uprooting forest and planting crops or fruit trees. Boundaries were identified by leaving a 1 to 2m wide strip of shrub, which acted as both demarcation and protection from animals. Boundaries were often reinforced by thorny plants, fences or posts. As the land transformed into a productive chamka

plot, its value increased and it was traded informally among villagers and outsiders. The value of land was highly dependent on improvements. Examples of chamka plot prices ranged from a value between 300,000 – 1,000,000 riel per 1ha plot.

'Wealthy' town people often acquired chamka land and then employed village labourer to clear, uproot and plant on the plots. The labourer made a small payment to the owner as a percentage of produce. Sometimes due to a lack of interest by the 'wealthy owner', the entire produce was taken and sold by the labourer. Some 'wealthy owners' had tried to sell the land back to villagers, however often the asking price was too high for any villager to invest. The land otherwise remained informally occupied by the labouring villager until ownership of the parcel lapsed into the labourer's possession and informal 'ownership' by the villager was recognised. Any land left fallow for a period of a few or more years could become newly occupied.

General tenure security of this informal ownership was only a minor worry to owners who relied on a common understanding and recognition between producers. The threat of losing the land to another person or back to the government without compensation was less of a risk to a user than that from the pillaging and destruction of produce by people and animals. The general consensus among 'owners' was that they felt protected from dispossession because as a group they would have to confront the issue if the problem arose. Land disputes were resolved through the Village Chief or Commune Chief. When higher authorities and elite people were involved in land transactions in chamka land, villagers remained largely compliant in the negotiations.

In both rice land and chamka cultivation, a rental /leasehold system was active, often not requiring payment for cultivating on someone else's land. This sometimes led to disputes when the rent free occupier gained possessory rights. The registration of plots should have resolved these issues, but often documentation was not valid within the village resolution process where social practice overrode legal norms.

Informal traditions of use and access to collect firewood on and around chamka were limited to abandoned parcels, boundary vegetation, dead and felled

trees or branches. A common relationship among villagers allowed cattle grazing over non-cultivated or harvested land parcels. Damage compensation agreements were resolved through the village or commune chief and depending on the extent of damage to the crop, compensation was paid in rice or cash.

FISHERIES ACTIVITIES

Che Meakh villagers are no exception to the traditional reliance on fishing as both a subsistence and market activity. Carried out predominately by the men, fishing was frequently practised along the river in Pongro using a combination of methods: throw nets, drag nets, bamboo cages or dyke building. The frequency and duration of fishing varied between the wet and dry seasons. As water levels rose and the accessibility increased with the rain, so too did fish stocks. However, in the dry season, rivers shrank, intermittent ponds and lakes dried up, forcing further travel for smaller quantities. Access to water sources was unrestricted for all villagers. Sometimes people established fishing arrangements and they tried to claim private use over particular areas of the river. These arrangements caused disputes as they typically disadvantaged or prevented others from fishing or gaining access to fishing areas.

Formal restrictions were placed on fishing methods and the catch size across most fishing areas of the Tonle Sap lake system and beyond. Limits were placed on the size of net meshing, openings of bamboo cages, the length of the net and false diversions made within the creek bed to attract fish. These limitations helped avoid fingerling and undersized fish being caught. Electrofishing (the use of electric shockwaves through the water to stun and kill the fish) is the most destructive and illegal fishing method currently used. It is having devastating effects on fish stocks, threatening the renewal of species, and the safety of fishermen. Banned electrofishing continued in remote locations and at night time to avoid being caught. Fishermen using this method were also considered dangerous because they may retaliate if disciplined. In the small village of Che Meakh only a few people were suspected of electrofishing, and many continued to overfish using unregulated entrapment devices or by modifying habitats. Unregulated activities exploited fish stocks and impeded natural fish breeding and feeding behaviour severely affecting viability.

Resource competition also effected the fish population. The flooded mangrove forests along the river banks provided a fertile and protected habitat for spawning however this resource was also used by villagers for firewood collection. This reduced breeding habitats, decreased habitat diversity and increased erosion within the river.

The Fisheries Department are largely responsible for the conduct of fishing activities, however because the area is expansive and most of the population is in often hard to reach places, monitoring is difficult. The range of fishing also differed between very small-scale subsistence fishing to large commercial fishing. Therefore local management is necessary. Currently this is part of the village Natural Resource and Management program and detailed fishing regulations and practices apply. Monitoring by Provincial authorities is irregular and management of the situation relies on awareness and community pressure within the village. The Natural Resource Management Committee are fully aware of people's fishing areas and deal with minor internal disagreements with the help of the village chief.

6.5.4 Village Concerns

ECONOMIC

The most immediate and common concern for Che Meakh villagers was "Ot'd hope", translated this means 'not enough'. Not enough was in reference to most things, particularly food, but could also be understood as meaning not enough money to buy goods. Food security was an increasing problem for both rice and fish supplies as failing crops, diminishing fish stocks and decreasing market value of both products placed pressure on villagers' subsistence. A number of people relied on payment from secondary work to purchase daily produce such as fish, vegetables and other provisions including rice during shortages.

Medicinal expenses were often incurred, and, depending on the severity of the illness, selling of assets, such as animals or land, was often required. Of the villagers who acknowledged the possibility of needing a large amount of money at some time, the most common response was to obtain this through the sale of an animal. On average villagers owning cattle had five to six, indicating their animals were used for more than just ploughing. Many villagers were committed to raising

cows, buffalo and pigs (Appendix 4 – Graph 1). Raising animals among rural farmers was a common, relatively safe and non-capital intensive investment strategy, as opposed to credit programs.

A small percentage of interviewees revealed they would use the village micro-credit scheme or other village households who were able to give out loans. However, both of these methods came with high interest rates strongly deterring those without a secure income. Entering into formal agreements with a bank, credit or mortgaging scheme was strongly opposed because most households had unreliable incomes. A more common option was to use village connections of either relatives or other residents. The importance of land remaining within the family for inheritance purposes often meant it was not considered sellable or useful as collateral (Appendix 4 – Graph 9).

ENVIRONMENTAL

Some villagers recalled the presence of thick forest surrounding the village during early settlement, however this was intensively converted to agriculture and housing areas. Santuk mountain was heavily logged and mined when Cambodia was opened up under national governance in the early 1990s. Locals believe forest destruction caused changes to rainfall patterns and the composition of soil. Problems of high erosion, poor drainage of water off the mountains causing flooding, loss of flora and fauna diversity, and reduced availability of wood and timber resources for fuel-wood and house or boat construction were attributed to the deforested Santuk and Srah Kchau mountain area east of Che Meakh. Very few old growth trees were observed. Coconut trees around the residential area, planted during original settlement in the 1950s are surrounded by immature trees and shrubs.

There was consensus among Villagers that forests were diminishing and it was increasingly more difficult to catch fish. While many agreed they were contributing to the problem, they were unable to separate their needs for a subsistence livelihood and protection of the environment for future generations. Subsistence and small-scale trading of resources by villagers was not felt to be the major cause. Instead their concern was for controlling larger commercial scale trade using electrofishing techniques and logging. Uprooting chamka land was

recognised as a destructive activity, however immediate benefits of wood for sale or use as fuel, the increased fertile land area for cropping and potential labour opportunities prevailed over sustainable conservation decisions being discussed by the NRM committee.

SOCIAL / ORGANISATIONAL

Many development activities were instigated in Che Meakh Village and therefore there was a presence of a strong social hierarchy. Remnants of communism-influenced systems from the Vietnamese were evident as some interviewees referred to having a group head for their group of ten households. The current government-initiated structure that set up Village Development Committees was also present. The impact and functioning of this committee dwindled considerably as financial support, leadership facilitation, and incentives from higher authorities were discontinued. The elected Natural Resource Management (NRM) committee was an active group. However positions on these committees were often taken up by popular, responsible, well educated and active members of the society. Therefore they become overcommitted and unable to fulfil all their responsibilities, especially when they are not financially rewarded and their roles were very time-consuming. This was especially noted when interviewing the Medicine Man and Deputy Village Chief who were both also on the NRM committee. The recently elected and very active Deputy Village Chief with a young family displayed his dependable nature and sense of leadership and advice among villagers. The most predominant leadership within the village was that of the Village Chief with over 20 years as head. A close relationship also existed between the villagers and the Commune Chief.

Widespread institutional systems failed to coexist outside the central body or implementing department, making the coordination of activities and unique jurisdictional issues difficult to resolve. Institutional arrangements such as the Village Development Committee lacked the capacity to properly support proper administration of their work at the grass roots level.

Political stability fears and political party support were only mentioned in a few interviews, while the majority of people did not really understand politics and were generally uninformed. Often answers to questions about politics were

qualified by the fact that they were only 'simple people' and did not know or understand much beyond their realm of immediate existence.

The greatest problem faced by Che Meakh villages for future consideration was the thought of not having anything to provide for their children's future. This was exacerbated by land scarcity and problems of subdividing land into unproductive parcel sizes.

The cohesion of village unity was reflected in family units and responsibility to one and other to provide for immediate family members both in the present and the future. However, a lack of 'community' and personal conflicts across the entire village were evident. Previously the community was pressured to act as a unit in protection against violent authority, however today people were given more freedom to act as individuals breaking traditional social cohesion.

The social structure of Che Meakh verges on dysfunctional because of the mistrust, the use of serious violence and threats, and greed of people in power. Social cohesion was also clearly threatened by diversity between richer and poorer families, politically and apolitically aligned families, and relatives and non-relatives of the Village Chief's family.

6.6 Case Study Site 2 – Srae Srama

6.6.1 Village Profile

LIVELIHOOD

Srae Srama Village area is situated approximately 150km north of Phnom Penh. A newly constructed tertiary road recently connected the village to national highway 6. Srae Srama is approximately 7.5kms from Tii Poh, central administration for the commune, which is a large, populated and established rural village. At the time of survey Srae Srama's population was estimated at 722 people with an average annual population growth of 4% for the past 5 years. The main cause of population growth was expansion of young families and marriage to people outside the community.

Srae Srama is a small and isolated village with a two-classroom primary school, a medicine man in the village, and small village shops. A large Wat under construction is located in Tii Poh, and Tang Krasang District town market is

regularly accessible to villagers by taking a public truck into the rural town approximately 20km away.

The level of education among villagers is very low, under half of interviewed households, including their children, received any formal schooling. Grade three was the average level of study attained and only 1% of the sample studied beyond primary school. Although a small group of children during the survey period were seen to regularly travel to the secondary school in Tii Poh either by bicycle or walking. Illiteracy and poor education were serious issues for this village. There were 206 children enrolled at the local village primary school through grades one to five. This figure indicates that at least 30% of the population are under the age of 12. Many children in the village were also too young to attend. Schooling is very basic and attendance and teaching is unreliable. Most students did not have any paper or writing implements.

Srae Srama villagers are highly dependent on old growth and secondary forest resources for income and livelihood (Appendix 4 – Graph 1). Timber cutting, firewood preparation and coal making supplemented rice farming. However, this forest dependent village was experiencing severe difficulties and high levels of unemployment due to a recent ban being imposed on all old growth forest activities.

Crops Varieties	Cashew nuts Orange Mango Eggplant
Employment Opportunities	Metre wood cuts (10) Coal Making (3) Labourer (1) Fruit seller (1) Village Shop (1)
(x) = number of interviewees involved in this type of work	

Table 12 - Srae Srama Livelihood Opportunities

Over 70% of households occupied a combination of lowland, permanent and/or swidden plots growing rice or fruit trees (Appendix 4 – Graph 2). Productivity was very low and frequently fell short of subsistence levels. Excluding forest activities, there was little diversity in employment or crop varieties (Table 12). Fishing was not considered a job, although 60% of the sample participated in subsistence scale fishing ranging from daily to fortnightly fishing. A small proportion of households grew fruit trees, however most relied on the district market for produce.

The number and condition of wells was comparably worse in Srae Srama, than Che Meakh, with fewer and more dilapidated wells per head of population. Approximately 50% of the population experienced problems because of usage issues, poor water quality and poorly constructed non-reinforced wells dug on village plots on the outskirts of the village. Wells were all accessible within a distance less than 100m.

Housing standards correlated with the distance from the residential village centre. In the village centre settlement was dense with large timber houses built on clearly demarcated and fertile plots. Towards the periphery, houses were smaller and made of smaller timber cuts, vine and grass material, land was more open and sparsely covered, and there were more communal living arrangements with less demarcation of plots.

Health issues, including malaria and dengue fever, were evident in Srae Srama, affecting the labour capacity of villagers.

LANDSCAPE / TRANSECT OBSERVATIONS

A number of transect walks were taken to fully explore the different resource variables within the village: coal ovens, spirit forest, swidden chamkar, permanent chamka and river beds.

The village is entered along the red earthen tertiary road past large cashew nut tree crops and some dry but concreted canals. The low lying residential village area of Srae Srama was surrounded by a sparsely covered dry forest. The dry secondary forest was sporadically used for swidden rice cultivation (Figure 22), smaller permanent crops mainly of cashew nut trees or it was left fallow. Vegetation was typically brushwood scattered with mature trees. Some areas retained forest thick enough to conceal large dirt mound ovens constructed for making coal (Figure 22). More densely covered forest areas were preserved as ‘spirit forests’. A strong belief existed in spirits that protect the village from sickness and harm. Two spirit forests were visited 200 and 500m from the edge of the village, each covering less than one hectare (Figure 22).

Temporary shelters were sighted amongst cultivated fields, some with earthen wells dug. Typically swidden crops exposed burnt out tree stumps and other tree varieties remaining, while permanent chamkar plots were completely cleared.

The mixed soils were mostly very sandy with a varying water table. Soil structure differed between low lying and upland areas changing the conductivity of the soil, therefore different crops, seed varieties and agricultural practices were used. Upland areas were generally not levelled making it difficult to plough, where as lowland areas were flat and subject to flooding.

Seasonal rivers meander across the village area creating intermittent ponds and supporting larger trees with more species diversity. Some of these rivers are used to irrigate rice fields. Small rice plots adjacent to the residential area were also harvested.

Figure 22 - Upland Rice Field (left); Spirit Forest (centre), Coal Making Oven in Dry Forest (right).

SETTLEMENT

Traditionally people of Srae Srama were a subsistence community living on the practise of resin tapping, drawing the sap from trees to be used as fuel for torches or to make rubber. These activities were supplemented by small scale timber trading, hunting large and small wild game, subsistence fishing, cultivation of rice, both permanent and slash and burn varieties, and gathering vegetables from the forest. Prior to 1993 resin tapping and some timber and wood products were traded. By the mid 1990's resin tapping ceased and small scale timber, coal and firewood trade among villages expanded rapidly against the competition of large companies using machinery and motorised transport. Changes in forest activities also saw a shift towards cash crops as new sources of income. Traditional temporary and rotational slash and burn (swidden) rice plots were converted into permanent fields for growing cashew nut trees. Swidden rice cultivation continued between the trees. Lowland rice cultivation and hunting and gathering wild vegetable continued however resources were diminished considerably and heavy restrictions were in place to limit villager trade.

Restrictions on coal production attracted increasing penalties however the demand remained strong. The banning of slash and burn cultivation in the dry forest was also feared. Without timber activities, the village future was questionable. Cashew nut chamka was slow to produce and lowland rice cultivation and fishing activities were not meeting subsistence levels. Wild fruits and non-timber forest products were relied upon by many villagers; however these activities were affected by the destructive forest practices (Appendix 4 – Graph 7).

In 1996, under instruction from District authorities, the village was resettled from a place called Boh Chmboh, approximately 3kms northwest of the village, to its current location. The villagers were persuaded to move from Boh Chmboh because the settlement area was frequently subject to flooding. Thirty tonnes of rice was the only assistance given to the village for resettlement. After resettlement, villagers were also distributed one hectare of rice land in an area called Tonlay Samut; however people were yet to cultivate anything on this land because it was such poor quality and required chemical fertilisers and cattle to plough the fields. There was little attraction to resettling and there was high resistance, eventually some household were forced to move. Boh Chmboh land was converted to rice fields, although the land quality is not very good.

Early settlers in Srae Srama took advantage of the distribution of house plots (25 m by 40 m). Often plots have more than one house built on them as they were subdivided to house newly married family members. Settlement in the village is not yet finalised as people are still claiming compensation and payment by villagers for having to surrender land (Appendix 4 – Graph 3). The standard village land value for a 1m x 15m strip was approximately 10,000R.

Social cohesion was strong in Srae Srama with almost all villagers interviewed related to other members of the village, and the majority called Srae Srama their homeland identify the close affinity with the land.

At the time of mapping administrative boundaries no records could precisely locate the extents of Srae Srama Village. Unofficial boundaries were located in some areas demarcated by natural features. However fuzzy boundaries and approximate distances from the village centre were described in a group meeting.

TENURE ARRANGEMENTS

Srae Srama had several types of active tenure arrangements, ranging from open access to dormant government approved concessions (Appendix 4 – Graph 2):

- State Land – State owned forest, referred to as Preah Kup meaning large forest area with big trees were controlled through concessions. Traditionally these areas were openly used for collecting tree resin by forest communities. Concessions have imposed restrictions and taxes on villager use; only non-timber forest products or small wild game may be freely taken from the forest.
- Concession agreements – There were three known leases that operated across Srae Srama. Two were logging concessions and the other agricultural. Concessions agreements assigned by government departments gave exclusive land and resource use rights for a certain period of time to companies. Concessions are typically designated by their respective line ministries with Provincial approval. However these are not coordinated across sectors, therefore forestry and agricultural concessions may overlap as observed in Che Meakh.
    a) Ghet (Chinese owned) and Millehay (Khmer owned) logging companies operated in the area previously used by villagers for resin tapping. The Ghet Forest Concession that used to control the forest in the far north east of the village was recently removed.
    b) Millehay Forest Concession covered an extensive north-south area of Kampong Thom Province to the east of Tii Poh Commune remained an active concession.
    c) Cam-Chi Agricultural Concession covered almost the entire area of Srey Srama. This concession was valid for 70 years however under the contract, using the land in the first year of obtaining a concession was a condition of maintaining user rights, otherwise these rights and the concession were nullified. If not nullified this entitled the company to legal use rights of the land. Cam-chi violated the contract by not using the land after one year however investigations showed that LMAP have recognised it as a valid concession.

- Informal open access / common property areas – Although under a dormant agricultural concession, the majority of village area was used as if it were common property. There were limited controls or management strategies for use and access of cultivated land. Large areas of fallow land were classed as open access. Publicly available land was usable at the discretion of the Village Chief.
- Individual ownership claims – the process for distribution of individual plots was unclear. The residential area prior to settlement was land of village families. During resettlement from Boh Chmboh the land was divided among the entire village population facilitated by the Village Chief. All 'privately' owned parcels were registered at the Commune level in 2000. This 'official' note described the owner, plot type, size, and use, and was signed by the Village and Commune Chiefs and thumb printed by the owner. Registered plots included all those permanently occupied and cultivated by a single person or family whether it was acquired through informal clearing and occupation, inheritance or government distribution. Houses, lowland rice fields, government distributed land in Tonlay Samut and converted permanent chamka plots were registered. While this piece of paper may be considered evidence for future land titling, it was not reviewed by the Lands Department and was not recognised by Provincial Cadastre Department staff. This documentation of land ownership only reflected initial distribution of land parcels and their relative location. Subsequent transfers outside the family within the village were witnessed by the Village Chief and supplemented by a letter written and signed by the Village Chief, vendor and buyer.
- Government land (1 ha) at Tonlay Samut, approximately 5kms northwest of the residential area was distributed to each household upon resettlement. None was cultivated to date because of its poor quality and efforts required to produce rice.
- Housing construction followed village regulation procedures incurring numerous taxes along the way. After receiving permission from the Village Chief (sometimes requiring a small payment), who then writes a letter on his behalf, the requestor must gain approval from the Commune Chief, where

another fee is incurred. Another approval and payment is made at the District level. Finally permission must be gained by the Forestry Department with a payment required for the amount of timber planned on being used. This may or may not require further permission from the Provincial Forestry Office. In total housing construction expenses are in excess of 180,000R. Although this is the standard procedure, it was unlikely that people fulfilled each step.

- Informal group areas – traditional swidden cultivation required temporary occupation of common property areas for use by family groups for a period of one to three years depending on the fertility of the soil. Informal agreements between groups were effective and followed a traditional distribution, use and management practices.
- Common property – common property covering approximately 20% of the public village area was used for a school, large guesthouse and meeting room, roads and access paths, and unoccupied areas for cattle grazing. Preserved common property resource areas were known as 'Spirit' forests. This forest had restricted use. A small stilted spirit house was constructed and ceremonies were conducted to pray to the spirits for protection. Removal of resources from the forest, especially large trees was prohibited and offenders were punished by the spirits.

6.6.2 Village Development Activities

Srae Srama villagers had benefited from a few development project activities over the past decade. The Tertiary Road Improvement Program (TRIP) was a joint development program between Cambodian Public Works and German Government Aid to assist transportation and access between rural villages. The Adventist Development and Relief Agency (ADRA) installed a few water pumps for the village however there was no ongoing assistance to maintain the pumps and therefore most were derelict. Construction was underway for a new school building and water pump by UNICEF, using Swedish and Japanese government aid agencies (SIDA and JICA) to finance the project. This project employed a number of local villagers.

A number of major programs were tentatively planned for Srae Srama. A similar Natural Resource Management program operating in Che Meakh by the

Integrated Rural Development Project was being planned. Again this would require establishing a natural resource committee, raising public awareness of sustainable resource use and undertaking a natural resource inventory. The Land Management and Administration Project were also preparing for aerial survey control. In Tii Poh an awareness campaign was launched and the initial stages of systematic registration were being prepared. It would not be long before Srae Srama was targeted, although no villagers were aware of it.

6.6.3 Land and Resource Tenure

GENERAL TENURE

The most important and staple requirement for the majority of people in terms of resource tenure was holding lowland rice plots. A significant number of people felt that swidden rice fields were also a most important resource. Permanent crops were rated as the second most important resource, and firewood and drinking water access equally necessary. Ponds and rivers, although providing a large percentage of people with fishing opportunities, were not considered an important resource, mainly because they were intermittent and unreliable. Some recognised the importance of water resources for irrigating lowland rice fields. The rating of old growth forests was largely qualified because of enforcement of strict bans: if villagers were allowed free access, it would be rated as one of the most important resources; if not, it was of no interest and not important. Without forest access the importance of Chamka land increased. The government land in Tonlay Samut was of no value and often ignored or forgotten.

LOWLAND LAND USE

Seventy percent of villagers relied on individually owned low-lying rice fields for subsistence (Appendix 4 – Graph 4). Villagers described long and continuous occupation of inherited lowland rice crops (between 0.1 and 1ha), which were primitively irrigated and subject to flooding. Small dykes demarcated boundaries and plots smaller than 1ha were sold for between 130,000 – 200,000 R. Most interviewees were satisfied with the productivity of land and were not using fertiliser. Others owned poorer quality and sandy land inadequate for growing the particular grain of seed available. Some people were fortunate to have rice fields located near the village while many others cultivated plots at the old village site.

A private and individual relationship existed between family owners and their land. Two thirds of people with this land had a document that described ownership details, while one third of people relied on oral agreements and traditional occupation for security. Lowland areas (for which they had a ticket) were sometimes temporarily used by other people for growing rice to transplant and rice payments may be negotiated.

TEMPORARY UPLAND USE

Over two thirds of households interviewed also cultivated swidden rice, which was more productive than lowland rice (Appendix 4 – Graph 5). Swidden agriculture required more intensive efforts because of the short lasting fertility of each plot. Secondary forest was cut down and burnt in preparation for clearing and then sowing rice seeds. The burning process accelerated the release of nutrients from the plants into the soil to enhance its fertility. This land was only used for one or two years of intense rice production. When it appeared to support only grass, it was considered infertile and abandoned. As soon as the land was abandoned, user rights reverted to the public. A person could only hold onto user rights of the land if he continued to clear it. Land was left for 10-12 yrs before returning it to cultivation. Occupation of swidden land was not a systematic process; people target densely covered areas for clearing with trees 10 years old or approximately 4-5m tall with thick trunks.

Rice seeds used in this method were of a different variety than lowland crops. This was important because they were sown and harvested at separate times allowing people to cultivate both. During April of each year, a large area of open accessible land is selected and equitably distributed among three, four and up to ten families of a group. The size of the area chosen per family in a group is highly dependent on the labour capacity of families to clear the forest. This process is organised with group consensus before any forest is cut. Larger groups use approximately 10ha, while three families will often share two or less hectares of open forest. Sometimes small yet productive areas are chosen by one family. The group dynamics for selecting forest may change from year to year depending on which households require chamka rice. Groups are also not necessarily family or relatives but will be from the village.

In May, final clearing and burning off takes place. Families join together in July to plant all the swidden rice at the same time. Lowland rice is normally planted later in August in the middle of the wet season. All the villages cultivated swidden rice plots;they collectively sow seeds on one piece of land, followed by the next until they are all done. During harvest in November, people go individually and harvest their own areas all at the same time; this takes about 5-7 people per field. Lowland rice is harvested a month later.

Trees, small bushes and branches laid on their side are left to demarcate the cultivated area and protect the crops from wild pigs and monkeys. This land was only used for a very short time and was randomly selected; therefore no real value was placed on it and it was not considered transferable. The only evidence of ownership of this land is through occupation and oral agreements supported by surrounding users. This land was deemed secure because of the number of people working in close vicinity.

CHAMKA LAND USE

Chamka upland areas are used for permanent cultivation practices. Approximately 70% of interviewees made use of upland forest access to acquire permanent plots, predominantly for cashew tree planting. All of these plots were acquired by clearing and uprooting stumps after traditional swidden rice was cultivated. Plots converted prior to 2000 that were individually recognised may have received the communally approved documentation to secure private ownership. However people mostly relied on oral agreements and occupation recognition. Again ownership ceased if people did not maintain the land by cutting small bushes and taking the produce. The length of occupation and productiveness of the land often ensured secure ownership rights.

Chamka land was useful for growing vegetables or fruit although productivity was average and crops were not reliable. Much of the land was extremely sandy and undulating. Similar to Che Meakh village practices, 1 to 2m metres of shrub was left to demarcate the plot extent; if the plot was far from the village it was enclosed more securely to protect it from animals. The value of cleared chamka plots started at approximately 600,000R per hectare but only a few years previously it could be bought for 200,000R. Chamka plots were converted into

permanent rice fields using lowland rice varieties. Conversion of this land requires levelling, a very costly exercise at 130,000R per hour for a bulldozer.

Across this open dry forest area of temporary and permanent plots, firewood was gathered by village people for fuel, coal making or selling as metre wood (Appendix 4 – Graph 6). Middle-men driving lorries, visited the village to collect the wood or coal for on selling to the brick factory, palm sugar growers and bigger towns for fuel wood. It was preferable that wood was collected from dead trees and branches of a person's own chamka and certainly not from trees producing fruit.

FISHERIES ACTIVITIES

Fishing was carried out in the lakes, ponds and rivers surrounding the village as a subsistence activity. Ponds and lakes are only seasonal but the river is permanent and provides cattle with a reliable water source. Approximately 60% of families surveyed sent one person to go fishing, often with other people from the village. Fishing was an irregular activity and only carried out when there was free time. Some people went regularly, others only once every couple of weeks. A variety of simple methods were used by people in Srae Srama including: spears, basket scoops, bamboo cages, throw nets and building small dykes for diverting and draining the water.

6.6.4 Village Concerns

ECONOMIC

Srae Srama people while attempting to remain self sufficient were heavily reliant on trading forest products to provide for their livelihood. Very few people had sufficient food and income opportunities were coming to an end with the closing off of forests.

The presence of logging companies with forest concessions significantly altered the behaviour of villagers over a very short period of time. Prior to this, people's activities were supplemented by taking smaller wood products and non-timber products, such as sap (resin), wine, and rambutan. Cutting timber in the forest by villagers for profit only began in 2001 since the road was built and access by middle-men traders was available. There was little to no interaction between companies and villagers, and very few people benefited through

employment as labourers, and villagers were denied access. The simple equipment, labour intensive, selective, slow and sustainable methods of logging used by villagers were not matched when large and efficient machinery and trucks began logging for commercial activities. Companies introduced monetary penalties for villages caught taking timber from their concession area. Additional heavy fines or taxes were also imposed by the Department of Forestry to reduce villagers taking timber. In addition to fines, penalties included the seizure of the timber, carts, and buffalo. Payments of up to 160,000R were necessary to recover buffalo. Collecting timber products was increasingly considered unprofitable after fines and bans on coal making increased.

Over the last few years especially as they have resettled, people cut timber primarily for constructing their own houses. Houses in the village remained unfinished because of heavy fines and taxes. There was not enough rice harvested for the entire year for most households and there were fewer opportunities to earn an income. Unemployment in the village was causing great anxiety and distress sales of land, houses and fruit trees were prevalent. Development opportunities that concentrate on helping villagers recover from discontinued timber practices are vital but not available.

Initially the town resettlement in 1996 was feared and rejected by villagers. However people have accepted that the new road facility gave better access for small scale trading using larger trucks to transport timber and coal products from the village to markets. It was also providing faster travel to the market for villagers.

ENVIRONMENTAL

The destruction of the forest in this area was quite severe during resettlement after the Pol Pot regime. People from outside the village area, from Tang Krasang and Kampong Tmoah, were also known to have cut down the forest. Moreover the forestry department endorsed concessions to large logging companies. Although villagers were involved in logging and the destruction of forest products, it was in much smaller quantities than current removal rates by companies. The Department of Forestry over the past two years was active in enforcing control over forestry activities in densely covered forest areas and even dry forest areas

throughout the village territory. Forestry control was enforced by stationing officers at checkpoints throughout the forest and along its boundaries. Some officers were also staying in villages nearby to monitor activities. Srae Srama at the time of interviews was hosting two officers. It was difficult to ascertain whether payment to officers were official taxes or bribery payments. Further anomalies in forestry penalties emerged as payments differed depending on when and where products were taken and who was enforcing the fine: police, military police, environment staff, forestry staff or other government officials.

Natural resources availability was an immediate concern for villager's livelihood rather than the destruction or sustainability of forest resources. The intended natural resource management planning for this village will confront much greater problems than the minor resource damage issues that were occurring in Che Meakh because these villagers rely heavily on forest products for their livelihood. Natural resource management and education on sustainable resource use are a challenge to implement and to gather support for in this village.

Forest activities carried out by villagers in Srae Srama were deemed unsustainable. While traditionally the majority of the products used were renewable, current techniques and non-existent management strategies exploited the forest and wood resources so that they had become non-renewable. Trees for making coal were supposed to be cut at a thickness of about five to seven years growth, however frequently they were being cut prematurely at two or three years growth. Premature cutting of trees severely stunts future growth.

Authorities in the Integrated Rural Development department advised that the dry upland forest was not suitable for growing rice, and cashew trees, although hardy, were also not preferred. Crops grown at a profitable margin would be dried beans, cassava and others suited to a semi-arid environment. Large amounts of facilitation and capacity building were required to provide the necessary education and development assistance to change the practices of these communities. Limited innovative capacity among the villagers and poor and isolated education are a major factors when considering development initiatives.

Natural resource management plans, concession area management and restrictions, and administrative village and communal boundaries were

incongruous, overlapping and inconsistent. Concession boundaries followed mapping grid lines, management boundaries sometimes followed natural features or administrative boundaries, and village boundaries were unofficial and poorly understood. Cooperation among any of these management strategies would serve a sustainable and functional purpose for all stakeholders involved, including sustaining villagers' livelihood, however the prospects for achieving this were dismal.

SOCIAL / ORGANISATIONAL

Rural poverty and signs of food insecurity were much more obvious in Srae Srama than Che Meakh. Many people were out of work and desperately asking for money and help. The village was poorly serviced by water and education facilities. Education was not emphasised as being an essential part of children's upbringing as many did not attend and were not pressured into going. Many of the children were barely clothed and some villagers survived on two meals per day; typically this was just plain rice.

Their verbal concerns were mostly about wanting the forest industry bans lifted so they could safely return to work. The most common responses to immediate household concerns were "Ot'd hope" (not enough) and having no job. Only a handful of people in the village produced enough rice for their subsistence and the majority relied on a monetary income from timber activities selling coal, firewood, timber cutting and labouring for others to supplement their livelihood. Prohibited access to forests was a common secondary concern. A few other concerns were sickness, lack of land and capital to buy land, and the state of household shelters. Large families were struggling in small houses and many who had made investments into constructing new homes were unable to complete them because of timber extraction restrictions.

Forest bans and fears of future restrictions on public land for shifting cultivation were the most common future concerns. However many were unable to contemplate beyond their immediate concerns of not having enough rice for the family tomorrow. There was little attention paid to leaving land for their children as inheritance, and only a few mentioned the need to give anything to their

children in the future however this lack of acknowledgment contradicted traditional patterns of land transfer.

The Village Chief was informally nominated in 1979. He remained very active in his role, was not an overpowering man and was well liked by the villagers. There were less signs of corruption or bias from the village chief or deputy village chief in Srae Srama, however his power in decision making and adjudication was sometimes ineffective for disputes resolution and people did not respect his decision. This was reflected in disputes over public space, inheritance and distribution of land, and the sharing of wells. A couple of major land disputes within the village required more effective mediation. It was not surprising that many of the villagers avoided using the Village Chief to help them and preferred to rely on family and neighbours (Appendix 4 – Graph 8).

As ascertained from Che Meakh and witnessed again in Srae Srama, during ceremonies, villagers were very communal and celebrated together with a sharing and generous attitude. In Srae Srama the public house was used for communal activities. Women and men were observed to spend a lot of time in their own groups. The cohesiveness among Srae Srama villagers was more apparent despite a few land disputes. Keeping the peace in the village was very important because they did not want to be isolated. Quarrelling with other villagers was almost seen as taboo. Most minor disputes were settled by neighbours or the Village Chief and were caused mostly from domestic fighting and drunkenness.

More serious issues persisted in the village in terms of land conflicts that continued since settlement period where peoples' inheritance of land was not honoured. Often the weaker person with less support of the two stakeholders lost the dispute with little or no compensation. This displayed possible division between richer and poorer people within the villager. However the division was not as severe and less threatening and violent than disputes observed in Che Meakh which had left a house burnt down.

Most children appeared quite healthy although some had deformities possibly caused by poor malnutrition during pregnancy or early childhood. The older generation suffered more serious problems highly correlated to working in the forests. The male physique was obviously thinner than the men of Che Meakh.

6.7 Case Study Site 3 – Ou Ta Prok

6.7.1 Village Profile

LIVELIHOOD

Ou Ta Prok is approximately 130km northwest of the capital on the fertile banks of the Tonle Sap Lake. This rich natural resource provides sustenance for villagers through fishing and rice farming. The natural phenomenon of the Tonle Sap Lake at its peak inundates over one million hectares of plains and mangrove forests. The main residential area of Ou Ta Prok is at the outer limits of the lake alongside an embanked earthen road, which leads to national highway 5.

Ou Ta Prok covers a unique village area where the majority of the population lives on the land as rice farmers and a proportion of villagers reside in a floating village on the Tonle Sap Lake. The floating villagers solely rely on fishing and village trade for rice. Over 50% of all village people fished or traded smoked fish from the lake, and 80% participated in secondary income raising opportunities as detailed in Table 13 (Appendix 4 – Graph 1). The productivity of rice farming, fishing and diversity in other small employment opportunities provided reasonable livelihood security for Ou Ta Prok villagers.

Ou Ta Prok was smaller than Che Meakh with 193 households and a population of 936. Ou Ta Prok had only a marginal population growth; the census recorded 922 villagers in 1998. This village is quite established with a wide range of demographics and people migrating in and out of the village.

Ou Ta Prok recorded the highest percentage of people interviewed with households receiving some level of education, more than 10% educated higher than grade 6, and some finishing senior schooling. Education services for children in the village were better than previous villages, with a primary school in the main village area, two others within a 3km radius and a large pagoda providing informal education less than one kilometre away. A secondary school was also accessible by bike or walking in Prateah Village less than 3kms away on

Employment Opportunities	Palm Sugar (5) Weaving (4) Animal raising (5) Vegetable seller (3) Village Shop (3) Noodle Making (2) Garment maker (2) Labourer (1) Trader (1)
(x) = number of interviewees involved in this type of work	

Table 13 - Ou Ta Prok Livelihood Opportunities

the national highway. Almost 15% of Ou Ta Prok villagers lived in the floating village. For these families, there was no easily accessible school to send their children; adjacent floating villages approximately four kilometres away had schools, however these were considered too far to travel to each day. Some villages sent their children to live with relatives on land in the main residential area while they went to school, but on most occasions the children were reported as not receiving any schooling.

Ou Ta Prok had access within the commune area to a health centre, but they did not have a medicine man residing in the village. Canals, roads and wells were recently constructed improving the village services. Houses in most areas of the village were large and well maintained, built on tall stilts with corrugated iron or ceramic tiled roofs. A number of people had aerials for radios and some also had cassette players. Radio communication was important for keeping people informed particularly in rural areas.

Figure 23 - Large House in Ou Ta Prok

The people of Ou Ta Prok appeared to be very active and generally in good health, actively building houses and boats. A number of families grew vegetables in home gardens. Villagers were well supported by facilities and services available at the Provincial town of Pursat. Integration and communication with a large rural town meant they were exposed to development, technology and large scale trade activities.

LANDSCAPE

Ou Ta Prok Village was a narrow territory of occupation within Ou Sandan commune. The village area extended from the north floating village area on the Tonle Sap, through flooded forests, across seasonally inundated rice fields, to a main earthen road that also acted as a dyke to protect residences. This area was settled on fertile land with fruit trees and vegetable gardens that open out to an expanse of rain-fed rice fields with small clusters of residences and palm sugar producing trees. Between the three residential areas rice, fish and vegetable

trading played a major role in balancing resources between families. Water and forest resources were within reachable distance for villagers, and an increased awareness of conservation of natural resources was affecting access, costs and sustainability of these once renewable and plentiful resources. The landscape of Ou Ta Prok changes significantly between the wet and dry seasons reflected by changes in resource use and floating village migrational patterns. Figure 24 is a sketch depiction based on accounts given of the floating village when subjected to annual inundation.

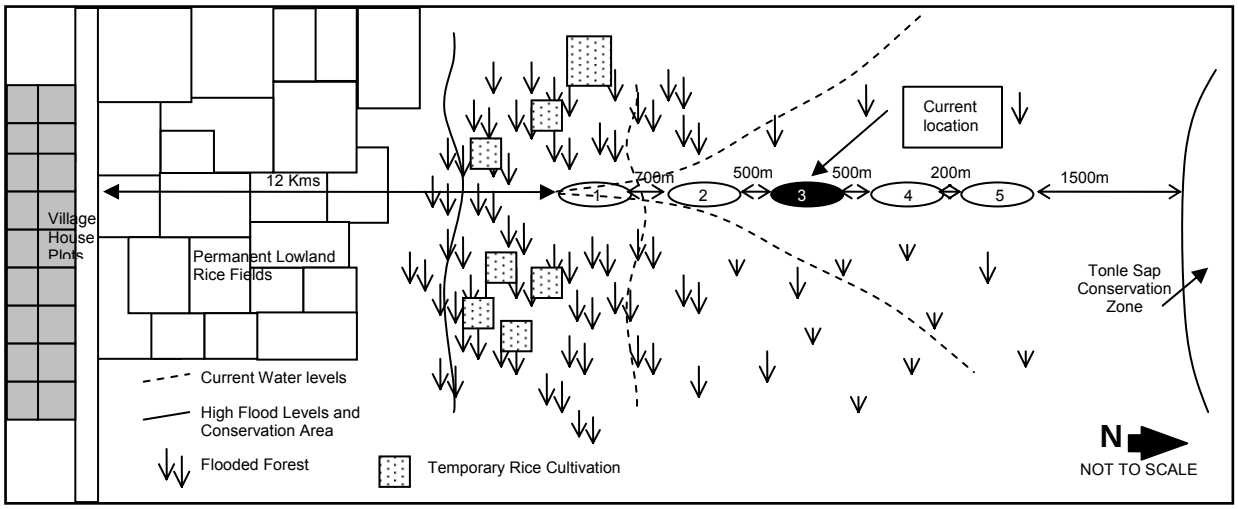


Figure 24 - Ou Ta Prok Floating Village Migration Pattern

The dynamics of each settlement area were quite different as people were forced to adapt their lifestyles to the constraints of the environmental conditions. A field trip was made to the floating village, guided by a member of the village Natural Resource Management Committee and accompanied by an older lady on her regular fish trade journey. The journey on foot began from the main road heading north across low-lying rice paddies recently harvested and then into densely covered flooded forest. Lowland rice growing areas were burnt after harvest to help growth regeneration and to produce new grass shoots to feed buffalo and cows (Figure 25, top left).

A large part of this area is flooded forest vulnerable to the short-term, destructive shifting cultivation practices. Small, sporadically selected areas of approximately 0.1ha were used by some families to grow rice seeds, which helped intensify cultivation of approximately 2ha of rice fields.

Figure 25 - Smouldering Rice Fields (top left); Dry Mangrove Forest (top right); Floating Village (bottom left); Temporary Floating Shelter (bottom Right)

A small tributary of the Tonle Sap Lake was reached after walking across smouldering rice fields, along dykes and then through the dried up flooded mangrove forest on ox cart tracks (Figure 25, top right). This creek opened into a bigger stream where a group of boats, including a motorised long boat were clustered. The stream was gradually surrounded by water, and large mangrove trees were replaced by lily beds. The floating village was soon visible (Figure 25, bottom left) and further north the Tonle Sap expanded to the horizon. Some families were settled outside of the village to take advantage of better fishing and to make fewer moves in the migration process (Figure 25, bottom right).

The flooded forests provided a wood fuel resource and, under new resource management guidelines, were useable by members of the village for subsistence. This enforcement was witnessed during the research journey as outsiders were reminded that they were prohibited from cutting and collecting mangrove trees and were encouraged to move out of the area: they obliged.

SETTLEMENT

Most Ou Ta Prok villagers were removed from their land during the Pol Pot regime and returned prior to the government distributed of land in 1983. Land was distributed to families according to the family size, the largest plot size being about one and a half to two hectares in addition to a house plot. People were issued land receipts in 1996 for each of their plots, however they were unaware which department was responsible for issuing receipts; most likely it was the Department of Agriculture. Villagers living on the lake did not receive any land during the redistribution period and started settling in this area from 1985. At that

time only six to ten families resettled and, since then population among households increased almost three fold. Interviewees on the land had definite 'homeland' connection with the village, while interviewees of the floating village had mixed connections to the village as 'homeland'. Some had settled from other villages and some had moved off the land. Some villagers only lived on the Tonle Sap for two months during the wet season, building small shelters in the inundated forest area. The floating villages were equipped to house families as well as shops, pig pens, fish pens, and floating woodpiles.

Another group of villagers living among the upland rice fields were distributed land and chose to live closer to their fields instead of in the main village. Some houses were clustered and others spread out, and accessed across dykes and ox carts, and by boat during the wet season.

TENURE ARRANGEMENTS

In Ou Ta Prok diversity in formal and informal land arrangements, ownership insecurities, unmethodical ownership recording, restrictions, and intensive resource use were all observed. Land distribution was in a similar state to Che Meakh village. Villagers were competing with increasing resource demands caused by expanding families and adverse environmental changes to the land and resources. Land and resource tenure types were:

- Individual Ownership (semi-formal): Some land plots distributed by the government were subdivided and clearly demarcated as rice plots for private occupation. They were held in secure and exclusive ownership. Other individually occupied parcels near the main village settlement were cleared when settled. Most of these rice plots and residential parcels were also recorded according to ownership details and relative parcel identifiers: area, use and adjoining parcels. Upland rice fields, south of the main settlement, were clearly demarcated by dykes and canals. Since the settlement period starting in 1983, most transfers of land were through inheritance, although some were transferred to people outside the family. Village house plots were rapidly being subdivided to provide area for new homes of young families. Subdivisions and ownership transfers were not recorded.

- Temporary Individual Use: The majority of the low lying area north of the main road was unallocated State land and was temporarily and informally used by villagers. Recently more people embarked on slash and burn techniques to clear mangrove forest areas during the reversing Tonle Sap cycle to increase rice seed production. Plots were sporadically cleared and occupied for less than two months. Once rice was transplanted all rights associated to the use of the land were relinquished. On areas outside the mangrove forest, plots were marked with posts and a fence to prevent animal damage was necessary if the land was near an ox cart track.
- Tree Ownership and Rental: there was a strong recognition of palm tree owners and renters within the village. A few people interviewed owned up to 30 trees throughout the village. Trees were exclusively owned and were rented out through oral agreements between villagers. Typically payment in sugar or money was requested for the three months when trees produced palm sugar oils. Ownership was informally recognised among villagers without any documented agreements. Trees could be sold, although this was rare; typically they were inherited.
- Common Property Fishing Zones: Expansive and openly accessible areas were for the communal use and enjoyment by members of the village as detailed by recently enforced formal management guidelines. Only subsistence uses were acknowledged in the agreement, although small scale trading continued by floating village people in exchange for rice and other resources.
- Private Pondage areas: Ponds were constructed under a CONCERN assistance scheme to enhance fish productivity. Large ponds were held by individuals with informal agreements to open this for communal use when not raising fish.

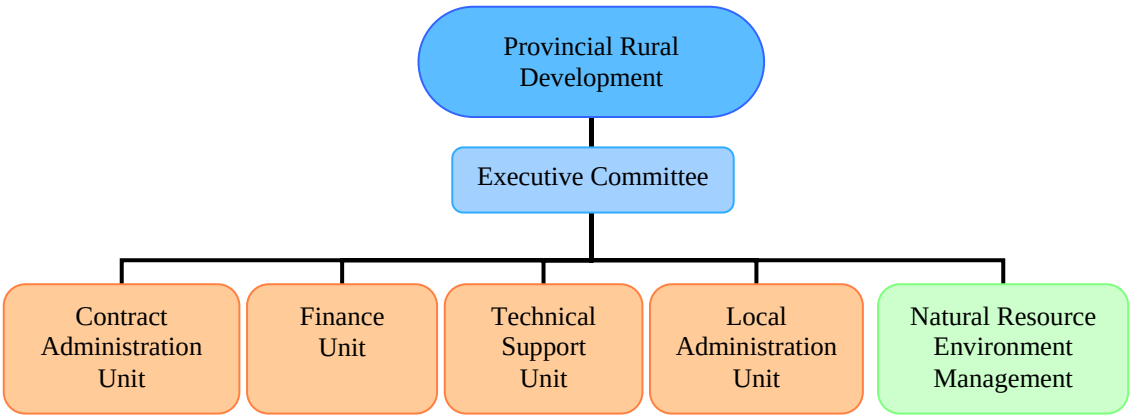
6.7.2 Village Development Activities

Ou Ta Prok villagers were beneficiaries of a number of development projects and assistance schemes effective in both long and short terms with integrated capacity building and cooperation among Commune resources. CONCERN, an environmental non-government organisation, was involved in assisting smaller

scale projects including building ponds, providing fish for raising and constructing wells and pumps. Credit agents from the ACLEDA bank group visited the villagers to offer lending and to make loan assessments. Few people used this credit agency and in most cases were not using their land as the collateral for credit (Appendix 4- Graph 9). Larger scale projects including building canals and roads were coordinated through the Food for Work, World Food Program (WFP). People laboured on the canals and roads in return for food rations. A large area of canal, $20m^2$ area and 70cm depth, returned 200kg rice, eight cans of fish, two bags of salt, and four litres of oil. These physical jobs provided immediate relief for villagers and delivered infrastructure for the long term. The hard work did not appeal to everyone as a sensible form of assistance.

This village was part of a commune involved in the Seila national decentralisation program that aimed to improve resource capacities, management responsibilities and development planning of people in government. This program supported by the Seila Taskforce was a donor funded program established through the Provincial Rural Development Committee supported by the Governor, line agencies, District Chiefs, Military Police and the Military. At the Provincial level policies were formulated, budgets allocated, development and investment plans approved, and resources mobilised. There was then another level of hierarchy for the Executive Committee, followed by 5 departments as shown in Figure 26.

Figure 26 – Seila Organisation Chart



Liaison officers worked closely alongside village chiefs and other representatives who formulated Commune development plans and allocated a small budget towards development activities. Ou Ta Prok, as part of Ou Sandan Commune, was included in these activities. The most immediate priorities recognised in Ou Sandan Commune were:

- Training in the use of chemical fertiliser
- Training in pig raising, including demonstrations
- Training in buffalo raising, including feeding
- Animal vaccination to prevent disease
- Provision for fingerlings for fish raising
- Multi-cropping techniques
- Land titling
- Building a Commune office
- Vaccinations for people to prevent 6 diseases, including tetanus
- Information about contraception / family planning
- Information about women's and children's health education.

Not all priorities were applicable to each village; however they were all important for raising the development prospects and standard of living in the Commune. This initiative worked closely at grass roots level to maximise benefits and efficiency for recipients and reduce delivery costs.

6.7.3 Land and Resource Tenure

GENERAL TENURE

Ou Ta Prok villagers were more reflective and comprehended ideas about resource tenure and security than people in with previous villages. Semi-formal secured land ownership and use was achieved during settlement distribution and over 80% of people interviewed claimed to still hold their land receipt or ticket. However, once again transactions made since registration were principally oral and some were possibly documented by the village chief. In terms of resource priorities, rice farmed land was the most important for the villagers. The majority also agreed that this was equally as important as access to drinking water, and shelter.

By collective agreement, the next most important resource was the old growth forests, due to the fact that building materials were necessary for house and boat construction. The importance of the Tonle Sap Lake and surrounding flooded forest varied from being the highest priority to the lowest among various discussion groups. There was consensus among land dwellers that pond and river access was a medium level priority for most visitors, particularly considering their extended distance from the lake. Heavy restrictions and public awareness of recently enforced management, use and access controls on fishing and forestry resources may have accounted for people downplaying their dependence on these resources. The opinions were contradicted by the fact that the majority of interviewees regularly traded fish and produce and collected large amounts of firewood from the flooded forest. Varying importance was placed on palm tree ownership and access depending on individual circumstances and dependence on this resource.

This village expressed individualistic ideas while attempting to work as a unit. Personal and household security generally took priority over activities for the common good.

LOWLAND LAND USE

Rice farming in Ou Ta Prok utilised two types of cultivation methods, irrigated and rain-fed rice, and deep water cultivation on fields temporarily inundated from the Tonle Sap Lake. In both these areas distinctive individual plots were held by land owners with ownership records. The majority of those with land tickets had acquired land through the government distribution scheme; those without evidence either inherited or recently purchased the land. Receipts were issued in 1996. When asked to show the tickets, people's responses were that they were unable to locate them, had lost them, left them in the possession of other family members or previous owners, although they still claimed tickets were important. Less than half of the villagers from Ou Ta Prok claimed parcels in the seasonally inundated cultivation area, and more than 80% had two or three rain-fed or irrigated rice plots (Appendix 4 – Graph 4). Each household owned approximately 1ha of rice fields, typically using chemical fertiliser to enhance the yield. The irrigated rice fields were demarcated by dykes. Deepwater rice fields

were marked by large posts which could be seen at high water. Most plots were in relatively close vicinity to peoples' shelter, ranging from 200m to 1km; a few were about 2kms away. Inundated rice fields were valued at approximately 600,000R per hectare and irrigated plots were more expensive, valued at over one million riel per hectare. The plot sizes described were smaller than the other villages, possibly reflecting higher subdivision rates and/or better productivity. Rice fields and land for housing were considered privately owned and were important possessions for inheritance. Numerous small rice plots and multiple shelters on the one house plot were a result of subdivision carried out by families. The lowering of productivity from increasingly fragmented plots was a concern.

PALM TREE CLAIMS

An informal rental and labour market revolved around the use of palm trees in Ou Ta Prok. Trees were informally acquired and planted sporadically during settlement after the Pol Pot Regime throughout the village along dykes and around housing areas. Tree ownership was exclusive to individuals within the village who had all rights to take the produce, rent trees for a fee, sell them or cut them down. Strong communal recognition was the only record of tree ownership. Fees were paid in cash or in kilograms of palm sugar. The majority of the interviewees living in the sporadic settlement area were involved in palm sugar production, as owners, renters, collectors and sugar producers.

Historically palm trees were indigenous to the South Asian continent as farmers planted palm trees on dykes to provide shade for the rice, protect fields from high winds and to tap the sap for cooking. Similar to banana plants, palm trees have multiple uses: their roots for medicine; trunks for timber; leaves for writing, handicrafts and roofing material; and the fruit for eating. The deep root system of palm trees recycles nutrients from deeper in the soil layer to the top soil to help keep the land fertile and productive. Palm sugar and oil can only be tapped from mature trees, at least 15 – 20 years old. Sap is collected from the palm flower during the dry season. Once collected the sap is boiled, it is made into a liquid honey or crystallised as sugar which can be stored.

FISHING ACTIVITIES

Fishing is one of the main subsistence activities accessible to Ou Ta Prok villagers with approximately two thirds of the population fishing or trading fish. Fisheries and forestry resources were in abundance which stimulated competition among villagers and between villagers and commercial fishers. User rights and restrictions under natural resource management agreements were recently formalised by the Fisheries Department to improve management techniques, improve sustainability and conservation of fisheries resources and establish guidelines for more responsible use. These guidelines specified user rights, restrictions and penalties, according to: fishing methods; catch size and quantity; forestry removal; and rights of authoritative control. Restrictions reduced user benefits to subsistence and small scale trading levels if they were in classified Community Fisheries management areas. The demarcation of these areas and the extent to which regulations were in effect were unclear.

Most fishermen had boats and used drag nets, throw nets or hooked lines (long piece of line with numerous hooks hanging in the water). Those with drag nets were mostly people living in the floating village able to store larger equipment, while others travelling from the main village and fishing less regularly used throw nets. Many fishermen involved in small scale trade sold to a larger floating market 4km to 5kms south of the village. It was advantageous for fisher people to live in the floating village however their fishing rights were the same as those of land dwellers, thereby limiting their ability to improve their livelihood.

Cart tracks were used to access fishing areas until the water was reached. Long boats were then used to reach the lake, past the mangroves. This access area was village common property. Villagers were free to move around, fish and collect resources in their designated village area under the set of Community guidelines. Once villagers moved out of the village, they were no longer allowed to use or collect resources.

Fishing in rivers around the village followed similar restrictions and tenure arrangements as those practiced in the Tonle Sap Lake. Subsistence fishing was more predominant in these areas used irregularly by villagers in their spare time.

Fishing in ponds followed more private tenure arrangements overlayed by communal rights of villagers to access the pond for washing buffalo. While fish were being raised, the owner could exercise exclusive use; at other times there was an informal agreement that allowed other villagers to use the water. These arrangements often broke down and secondary benefits for the community were not realised or utilised. Many of the ponds were fenced to stop animals. The ponds were acquired through the CONCERN development assistance scheme. There were cases of the ponds being sold to other villagers. A recent exchange had taken place where a 5m X 5m pond was sold for 300,000R.

6.7.4 Village Concerns

ECONOMIC

The livelihood of people in Ou Ta Prok, while still poor, was more stable and better equipped to meet immediate needs than in Che Meakh and Srae Srama. People in this village had more opportunities for development and were being better assisted by government and project schemes. Road and canal building projects benefited villagers through improved trade and travel accessibility and helped mitigate flooding. Generally dwellings were well established and a number of households grew fruit trees or small vegetable gardens for nutritional enrichment. There were only a few opportunities for secure employment other than resource-based livelihood activities such as rice farming and fishing. Palm sugar trading for some villagers was important for increasing household income. Only a few other occupations that provided a source of income were uncovered.

In terms of animal wealth, people in Ou Ta Prok had a secure amount of stock. At least two out of every three households were caring for three to four buffalo, and more than 80% of villagers were raising pigs. Buffalo were used essentially for labour and pigs were raised primarily as an investment medium (Appendix 4 – Graph 9). The need for credit was acknowledged by 75% of interviewees and their main source was through other villagers. Some used or would consider using a credit agency and their animals and house title were important for credit proof. An example of animal credit value for pigs was valued as 2,500R – 3000R per kilogram, where large pigs weighed between 80 – 100kg.

ENVIRONMENT

The Tonle Sap Lake region represents a rich and bio-diverse environment. It is also a very fragile and intensely utilised and populated resource; therefore the balance of natural preservation, commercial resource extraction and sustainable use is a serious management issue. The Tonle Sap has been central to survival of Cambodian people and has acted as an economic buffer throughout their history.

Under French administration attempts were made to expand Cambodian economic potential through private fishing lot systems distributed under a bidding process. This practice was reignited during the 1990's under different commercial fishing schemes. Over the past decade serious imbalance occurred between areas of private/commercial fishing lots and leases, conservation zones and common property access areas. Elite and powerful fishing lot owners expanded their control of lots and intensified fishing in competition with one million local fishing families dependent on the lake who were increasingly affected by reduced and threatened access rights. Reclaiming local community fishery areas, monitoring conservation zones and appealing to commercial fishers to use legal methods were challenging tasks on the agendas of officials of government authorities, local fisherman, and non-governmental organisations.

The composition of flooded forest species changed dramatically since the 1950's when commercial fishing in the lake region intensified and over exploitation upset the natural balance of flora and fauna. Conservation areas are demarcated by large posts and signage towards the middle of the lake. Signs were expensive and frequently vandalised.

The Community Fishery Management Scheme was established in the village in October 2003, and resource management strategies were slowly being implemented. The committee consisted of 11 Members: Chief, two Deputy Chiefs, four Guard or Protection officers, two Public Awareness officers, one Treasurer and one Commune Adviser. Only one person on the committee lived in the floating village. This meant biased decisions were easily made, favouring the fishing activities of land dwellers. This was particularly imbalanced considering that most fishing families resided in the area bearing the most impact. The Department of Fisheries conducted three training sessions with the committee.

The community boundary was easily identified by residents of the village. Future controls were expected to increase and more signage would help demarcate areas making it easier to ensure people fished only within their community fishery area. Similar to efforts in Che Meakh enforcement was hindered by the powerlessness of committee members who could merely give verbal warnings to first time offenders. Only authorities could act on subsequent offences by taking equipment and issuing heavy fines for repeat offenders. However their involvement in enforcement was infrequent because they too, were under-resourced.

Formal restrictions were recently enforced in Ou Ta Prok one to two months prior to the interviews, and villagers were still adjusting to the changes. Most interviewee complaints were directed at large and more powerful illegal fishing using electric shock and excessively large equipment. In contradiction the emphasis of community fisheries strongly focused on resource management for village users rather than those who were committing severe resource destruction and overfishing. New regulations impacted far more greatly on those living on the lake entirely and dependent on the resource for their livelihood than on land dwellers who farmed rice. Most members of the village were well aware of the new restrictions and management scheme and were well aware of its objectives. It was mainly populations living on or close to the water who were responsible for poor management and use of the local Tonle Sap resources by: exploiting flooded forest areas and using mangrove areas for rice field conversion; collecting fuel wood; and introducing new species that affected fish habitats. However in comparison to large fishing exploits, these were minor offences and caused non-permanent damage.

Further Natural Resource and Environmental Management schemes were implemented in Ou Ta Prok through the Seila operations taskforce. At the Commune level this focused on developing guidelines for fisheries and forestry area management. The objectives of Seila were to increase awareness and ensure participation in the sustainable management of all natural resources in the commune. Within Ou Sandan Commune the activities were developed as part of a SEILA workshop with members from all villages utilising facilitators and

advisors from Seila and line departments in agriculture, forestry, and fisheries. These activities were:

- To enforce 320 households in community forestry areas to protect the forest.
- To create a wildlife protection community with 747 households, again directed at those living in the protected area of the commune.
- To enforce environmental protection affairs with 862 households (entire commune).
- To create a flooded forest protection community with 427 households.
- To inform people about laws on environment and natural resource protection and management for 862 households.
- To prevent any activities that would affect the natural resource in the commune.

There were many sceptics about the effectiveness of community programs because they were aware of the bias caused by people in power and with group claims used to leverage individual benefits. Villagers were also concerned that the committee was a fairly inferior measure and would not be enough to stop all activities of illegal fishing and resource exploitation. However the main purpose of managing water quality, fish and forestry resources was understood by most interviewees, which signalled that public awareness was working. Importantly this initiative helped village people to articulate their right to manage and protect the community's resources to the best of their ability, while remaining under centrally controlled line departments.

SOCIAL

The main problems confronting Ou Ta Prok villagers involved contending with illegal fishing and the side effects of over exploitation by commercial fishing. Stealing of animals was mentioned as a major concern by a few interviewees. There were some strong concerns about political instability and the fear of war, which indicated that people in the village were informed about the state of the nation and the difficulties an election could instigate. A number of interviewees were far more ignorant of the situation stating that they were 'only simple people', similar to responses in previous villages.

Internally the three village areas within Ou Ta Prok were perceived as harmoniously settled and safe environments. During the interview period, many celebrations took place including weddings and rice harvest ceremonies. All villagers were involved, generously giving and enjoying large festivities over a number of days.

As for the social structure and village organisation there were a number of leaders and committees for people to be involved in the development of the village. Depending on the activities, three to four village meetings were held per year involving all the group leaders, chiefs and residents. Positions held by villagers supported the Wat committee, consisting of two permanent members responsible for informing about ceremonies and fundraising for the pagoda, and secondly the Village Development Committee (VDC). The VDC elected four people to liaise with development activities within the commune. Again those elected were very active members and were committed to road and canal building activities, and organised people into Food for Work programs.

The distribution of settlements in Ou Ta Prok village meant three village heads were elected. Village Chiefs and Deputy Chiefs represented the two land residential areas, while a group village leader represented people from the fishing village. The main responsibilities of these people were involvement in development committees and adjudication of disputes. The village chief of the main settlement represented the village in higher administrative activities and raised the villagers' needs and desires. Villagers in Ou Ta Prok were happy to use various people within the village when they needed help or advice, and neighbours were most frequently referred to (Appendix 4- Graph 8).

There were generally two kinds of disputes: villager to villager; and outsiders against villagers. Small villager disputes were often a result of domestic issues, though some involved people moving dyke boundaries to gain more field area during the early period of the wet season when rebuilding typically occurred. Internal disputes were pacified and resolved with the help of the Village Chief, neighbours and, if necessary, the Commune Chief. The final result often required one family to make a compensation payment. Village Chiefs claimed to deal with about three to four domestic complaints per year and played an important part as

negotiators of the resolutions. Conflict is a sign of a dysfunctional society that can quickly erupt into violence, therefore in most cases resolutions were sought very quickly.

Larger disputes involving village people and outsiders were slower to resolve even when the disputes concerned small pieces of land. The result often involved land subdivision or compensation. Beyond the village chief, the next stage of resolution involved an external evaluation by the commune council and the final stage involved the courts. The extent of the dispute was often relative to the weight and means of the parties; for example, if they were rich they would take the issue further. On the other hand, two poor families would try to settle it internally so minimal costs were incurred, including those of the village chief.

The main village concerns were fixed on livelihood and food security. Sickness, unemployment, education, and money were some additional and important issues mentioned. People realised that they were fortunate to receive development assistant and improvements throughout the village area. Often illness raised concerns because of the high cost of medicine and reduction of labour potential. A common concern for their future was a serious lack of land available to be inherited by their children. Plot sizes were already small and future subdivision compromised production. This was a similar problem for housing in the village. Although people were grateful for the Food for Work Program, they would prefer putting effort into their own assets rather than public works, such as canals and roads that take a long time and great effort before reaping the benefits.

6.8 Summary of Cambodian Rural Tenures

The following table (Table 14) summarises the main characteristics of tenures observed during field investigations in three rural Cambodian villages. Each tenure type is described in terms of the elements of tenure as described in Chapter 4. The element of tenure has been replaced with the theme of security, to indicate the type of evidence and level of security provided for the user. There are often a number of overlapping uses involving different parties, individuals and groups, at the same or separate times. The relationship and ownership rights and responsibilities of stakeholders' for use and access are shown; their right to subdivide (if any) is explicitly stated as this effects inheritance processes and

resource management. Acquisition and transfer practices were often conducted in similar methods and are therefore described together. The marking and evidence of boundaries in both formal documentation and physical evidence on the ground are described.

The value element of tenure was subjectively prioritised according to whether it had economic, social and environmental value, since only some land had an fiscal value. Social value depended on whether the resource was more valuable to a household in its physical or spiritual form as opposed to its monetary value, for example natural resources provided food security for subsistence were considered socially valuable, as opposed to resources that were surplus, had fiscal value, and could be traded in a market. The resource was described as having fiscal value if it could be used as credit and was able to provide an income. A third environmental value was included if the use considered sustainability factors. In addition to this value, and according to all the tenure elements, a tenure sustainability rating was given. This rudimentary rating could be used to help decide whether continuation of an informally derived tenure was important, or depending on its other value ratings, how sustainability of such tenure could be improved. An example is the common property use of forests: although this tenure was deemed unsustainable, it has a strong social and environmental rating and has possibly been undervalued because of inadequate defence against commercial competition.

Evidence is not described separately but is covered in the elements column. The last column “value” represents, the main people to land relationship values in terms of sustainability factors. In addition to this a star ‘sustainability’ rating is given to relevant tenure security status and duration. This table represents the complex nature of rural tenure arrangements largely dominated by informal practices and communal people to land relationships.

(Use key for Table 14 provided on page 219)

Table 14 - Cambodian Tenure Typology

Typology	Use	Relationship / Ownership	Acquisition & Transfer	Boundary	Security [2, 3]	Value
Lowland parcel	Permanent rice cultivation and other crops	Individual/ Family Exclusive use during harvest, communal use post harvest for animal grazing Divisible	Distributed by Village/ Government Inherited Purchased Contractual sale agreement, recorded/verified by Village Chief Transfer requires registration	Semi-permanent dykes, posts, grass identifier - Cadastral index maps [1]	Titled - Formal Untitled – Semi-formal, genuinely recognised possession Locally secure	1. social 2. fiscal ★★★
House parcel	Shelter Home gardens Wells – communal	Individual/ Family Exclusive use Divisible	Distributed by Village/ Government Inherited Purchased Contractual sale agreement verified by Village Chief Transfer requires registration	Fences Cadastral index maps	Titled - Formal Untitled – Semi-formal, genuinely recognised possession Locally secure	1. social 2. fiscal ★★★
Chamka parcel / State Land Area	Villagers growing additional vegetable crops Collecting fuel wood	State has rights to entitlement Individual/ Family Exclusive Use Divisible	Occupation (cleared/ laboured) Purchased with informal contract of sale	Temporary fences of natural products (shrubs, brushwood etc), marked trees	Informal Locally secure Regionally insecure	1. social 2. fiscal ★★
Common Property (Designated Use)	Spirit Forest Community Forest Area Temple Roads / Paths Schools	State has rights to entitlement Communal Ownership Not divisible * Use by all villagers, although some resource may require outsiders to gain explicit user rights and abide by management rules.	Traditional Village Ownership Cannot Transfer	Natural and informally agreed boundaries Cadastral index maps	Communal Title – pending formal status Other Titles or demarcated areas – formal Untitled – informal but locally secure	1. social 2. environmental ★★★

Table 14 - Cambodian Tenure Typology (continued)

Typology	Use	Relationship / Ownership	Acquisition & Transfer	Boundary	Security [2, 3]	Value
Common Property (Non-designated Use)	Resource access areas Animal Grazing	State has rights to entitlement Open Access Use to villagers Not explicitly exclusive Not Divisible	Traditional village claim – cannot transfer	No determined boundary	Informal Locally secure	1. social 2. environmental
Common Property (Swidden Cultivation)	Temporary Rice Cultivation	State has rights to entitlement Individual occupation and rights to produce Divisible	A&T upon occupation (slash and burn) and only if left fallow for period of time	Temporary fences of natural products (shrubs, brushwood etc), extent of cultivation	State claims – unclassified Individual claim – informal , locally secure	1. social ★ (because of externalities and reduced land access)
Common Property (Water Resources)	Fishing Collecting of fuel wood	State has rights to entitlement Individual occupation and rights to resources Divisible	Traditional informal occupation for permanent households, temporary informal resource use and access rights for others	Cadastral index map for official government boundary, also subject to specific restrictions	State claim – unclassified Individual claim – informal, locally secure	1. social 2. fiscal (floating villagers) ★★
Common Property (Forest)	Collecting timber and non-timber products	State has rights to entitlement Possible Concession Agreements signed Not divisible but individual access rights may apply	Temporary resource use and access rights	Cadastral index map for official government boundary	Title / Concession – Formal Individual claims – informal, insecure	1. social 2. environmental 3. fiscal ★ (because of commercial competition)
Private Water Resource	Ponds for raising fish Washing buffalo	Temporary Private agreement during seasonal fish raising Communal at other times	Constructed on individually owned parcel	Privately fenced Cadastral index map	Title – Formal Untitled – Semi-formal, some insecurities	1. social ★★

Table 14 - Cambodian Tenure Typology (continued)

Typology	Use	Relationship / Ownership	Acquisition & Transfer	Boundary	Security [2, 3]	Value
Economic / Agricultural Concessions	Company leased resource areas for logging, mining, tourism, agriculture	State has rights to entitlement Use rights entitlements granted for period of time to companies Not divisible	Certified by Provincial Ministry or Department	Various methods of cadastral survey, GIS demarcates – grid lines, natural feature, & defined polygon boundaries	Concession – Formal, Secure if used according to agreement	1. fiscal ★
Social Concessions	Use rights given to the poor for recently de-mined or redistributed areas	Use rights for individual households – can be upgraded. Not divisible	Distributed by Government	Surveyed for distribution - Cadastral index map	Concession – Formal, Secure if used according to agreement	1. social 2. fiscal 3. environmental ★ (lack ongoing support)
Trees	Collecting fruits, nectar and other products, leaves, roots etc.	Individual and exclusive ownership, not divisible Some under rental agreement for produce collection	Occupation Inheritance Purchase	N/A for boundary Demarcation by inscription or informal acknowledgement	Informal Locally secure	1. fiscal 2. social 3. environmental ★★★

Key to Table 14
[1] Cadastral Index Map (CIM): this parcel/area is demarcated on the Cadastral Index Map, depicted as an overlay on orthophoto maps and prescribed a unique parcel identifier.
[2] Locally secure: possession or ownership acknowledged by villagers however it may be subject to external claims of ownership unlikely to compensate upon possession.
[3] Informal = extra legal rights, Formal = legal rights
Value: Current use 'sustainability' rating: ★ Poor and short term
★★ Average and medium term
★★★ Good and long term

6.9 Chapter Summary

Empirical data gathering in the three Cambodian rural villages enabled characteristics of a developing nation in Southeast Asia to be fully extrapolated in the context of tenure research. All three villages showed characteristics of utilising small scale trade opportunities to balance their livelihood requirements for food and materials. However for the majority of interviewed households their first and foremost activity, whether it was rice or fishing, seldom harvested or caught enough produce to feed the household, let alone trade for additional vegetables or meats. The land and natural resource use and management issues, issues in governance, inadequate administrative and institutional capacity, and low human and technical resource capacities were plagued by poor education.

This detailed insight into poor rural villagers' land arrangements in three different village Cambodian settings highlighted the immediate needs and limited forecasting abilities of societies. Activities such as land titling used valuable resources for unnecessary classification of already identified and secure private property, without necessarily providing benefits, such as credit access, to the new title holder. As shown by the previously certificated parcels, the documents soon became unrepresentative because transfers were not registered or documents updated. Fees were being leveraged by numerous other authoritative operations before formal fees were added.

Even more of a priority was the confrontation between livelihoods for increasing populations and finite or diminishing resources, decreasing natural resource access, and low yielding harvests. These were largely management issues affecting non-private tenure areas essential to maintaining subsistence livelihoods but no alternatives were being presented.

CHAPTER 7 – RURAL TENURE DEVELOPMENT ANALYSIS

There is a tendency to separate land tenure rights from land use rights. There is no effective institutional mechanism for linking planning and land use controls and the operation of land markets…Investment in new technology will only go a small way towards solving a much deeper problem, which is the failure to treat land and its resources as a coherent whole.
By Stig Enemark (2003).

7.1 Introduction

Chapters 1 to 4 discussed the importance of a comprehensive land policy to guide sustainable development and meet the needs of the rural poor by alleviating and preventing poverty. Land administration systems are an important and multi-functional infrastructure for formally delivering national development and land policy. However not all societies have the means or capacity to respond or engage in an imposed formal system, such as solutions of private titling among the subsistence rural poor. Cambodian case studies revealed the realities of informal rural societies' people to land relationships sustained by informal, complex and dynamic tenure practices.

This chapter uses the popular "lessons learnt" perspective in Section 7.2. This evaluative process describes the national setting, compares and analyses tenure typologies, and summarises complexities affecting rural tenure systems.

The chapter then extrapolates more general concepts from the case studies and background theory. Section 7.3 discloses problems with the transfer of concepts and assumptions made during formalisation. Section 7.4 presents possible approaches to formalisation developed from earlier models with a stronger focus on delivering poverty alleviation and sustainable development in rural poor societies using available tools within current land administration systems.

7.2 Lessons Learnt

7.2.1 Poverty Issues among the Rural Poor

The subsistence rural poor remain vulnerable in densely populated yet low yielding regions of a country, largely due to their dependence on the natural environment. Social and local beliefs, security and cohesion are significant in the sustainability of societies, particularly among those poor and distanced groups unassimilated, yet increasingly conditioned, by market economics.

Factors contributing to rural poverty are considered largely a result of problems that can be addressed by four different sectors in a cross-disciplinary approach. A depiction of the dimensions of poverty (rows) relative to each main sector theme (column) is illustrated in Table 15. Sustainable natural resource access and management, access to health services, access to education and primary infrastructure themes included in the 'other' column, (social security, infrastructure and good governance issues), show an association with the main poverty conditions based on empirical studies of the subsistence rural poor.

Table 15 – Rural Poverty Thematic Relationships

Themes necessary for reducing rural poverty / Poverty is the inability to satisfy basic needs through:	Sustainable management and access to natural resources	Access to health services	Access to education	Other (Infrastructure, social stability and good governance)
- Lack of control over resources	Applicable	*Not Applicable*	*Not Applicable*	Applicable
- Lack of education and skills	*Not Applicable*	*Not Applicable*	Applicable	*Not Applicable*
- Poor health	Applicable	Applicable	Applicable	*Not Applicable*
- Malnutrition	Applicable	Applicable	Applicable	*Not Applicable*
- Lack of shelter	Applicable	*Not Applicable*	*Not Applicable*	Applicable
- Poor access to water and sanitation	Applicable	Applicable	*Not Applicable*	Applicable
- Vulnerability to shocks	Applicable	*Not Applicable*	Applicable	Applicable
- Violence and crime	*Not Applicable*	*Not Applicable*	Applicable	Applicable
- Lack of political freedom and voice.	Not Applicable	Not Applicable	Applicable	Applicable

Not every poverty condition is associated to each theme, shown by "*Not applicable*" label. Qualitative case study data, including information from development organisations both government and non-government organisations, was used to derive this table. The table describes the cross-section of poverty issues that need to be addressed by different and overlapping sectors. Importantly for rural poverty a significant factor is the impact that sustainable resource management has on various poverty conditions. The following briefly describes the relevance of each theme to rural poverty.

- Poverty conditions of poor health, malnutrition, inadequate water and sanitation are highly associated with poor access to basic **health services**. These conditions are exaggerated in rural communities that depend on physical labour to survive, travel long distances for help and incur medicinal expenses disproportionate to their living costs. Poor knowledge about health and sanitation combined with inadequate access to safe drinking water are responsible for a vicious and endemic cycle of sickness, indebtedness and food insecurity among the rural poor. General health issues are complicated additionally by problems associated with working in the natural environment, such as malaria, exposure, and contamination and disease spread by animals.
- **Education** plays a significant role in ensuring informed and intelligent decisions are made by project designers and development advocates as well as beneficiaries.
    a) Educating the poor provides vision, provokes innovative thought and often presents options disguised by immediate boundaries created during poverty. Poor education affects the ability of households to secure access to basic needs; understand basic hygiene and nutritional requirements; foresee longer term opportunities and consequences of actions; and comprehend the bigger picture in terms of politics, trade, environment and the functioning of societies.
    b) Education can be empowering. Educated people were better equipped and more confident in being involved in group discussion and participatory activities, especially those not intimidated when facilitated by outsiders. Often the more educated interviewees gave more thought to and detail in

their responses and can be questioned further about issues. Education often correlated with better livelihood conditions.

c) Non-formal education through monasteries is an important resource for the rural poor. The ability to tap into the energy, resources and social unity of religion can be used as important tool to leverage within the development environment.

d) The depth and understanding of the contextual setting by project designers and how this influences the appropriateness of the design are significant determining factors in project success. Understanding the effect of historical events, traditions and behaviour is essential among the rural poor because these are strongly embedded in social consciousness and way of life.

- **Infrastructure**, **social stability** and **good governance** aim to provide a peaceful and adequate environment for people to carry out their daily activities. A responsible government providing public services and infrastructure is essential to support rural community activities to alleviate poverty. Good governance, political stability and local support promote social stability and a safe and more resistant environment. Good governance must support equity and justice among all citizens and, from a democratic perspective, empower people particularly poor, oppressed and minority groups. Education and health services as a responsibility of the government are part of essential infrastructure and assist in bringing about social stability. Instilling a sense of trust in government authorities depends on controlling corruption and decentralising powers.
- The sustainability of **land and natural resource access and management** for the rural poor is a key ingredient to poverty alleviation.

  a) First and foremost, access to natural resources provides immediate food security which directly addresses malnutrition and poor health, and reduces the effects of unpredictable events and shock. Controlled and responsible management of water sources is important for health, sanitation and food production. Availability of materials for shelter construction, resources for essential food products for primary and

secondary uses, natural fuels and raw material for making goods buffers the effects of poverty and possibly reduce the onset.

b) Many environments have undergone significant changes to their natural ecosystem and are required to support growing populations with higher yields. More suitable grain varieties, crop varieties, fertilisers and irrigation options, and other alternatives for raising yield are sought. Sustainable use and management of resources rather than short term and exploitive opportunities are essential, but often overlooked. Change management requires significant technical, physical and human resources to assist communities. Strong linkages between sustainability of resource use and management and education, provides avenues for poverty alleviation if suitably addressed by development agendas.

c) Sustainable mobilisation of rural land use and management must be associated with secure tenure, formal or informal, to give locals control over immediate resources. Secure rights to land justify the input and effort necessary for long term and resource intensive investment. Secure tenure and management plans need to be simultaneously put in place to avoid speculation and exploitation where economic tenure opportunities outweigh use management investment. Results are also skewed if management, ineffective participation and a lack of commitment are overthrown because of insecure tenure.

d) Sustainable land and resource management for poverty alleviation must also address access to and not just ownership of resources. Access to additional resources plays an important role in supplementing dietary requirements and material for shelter particularly for subsistence use by the poor. These practices need to be articulated in the details of a management plan and associated tenures to recognise a community's access over public resources.

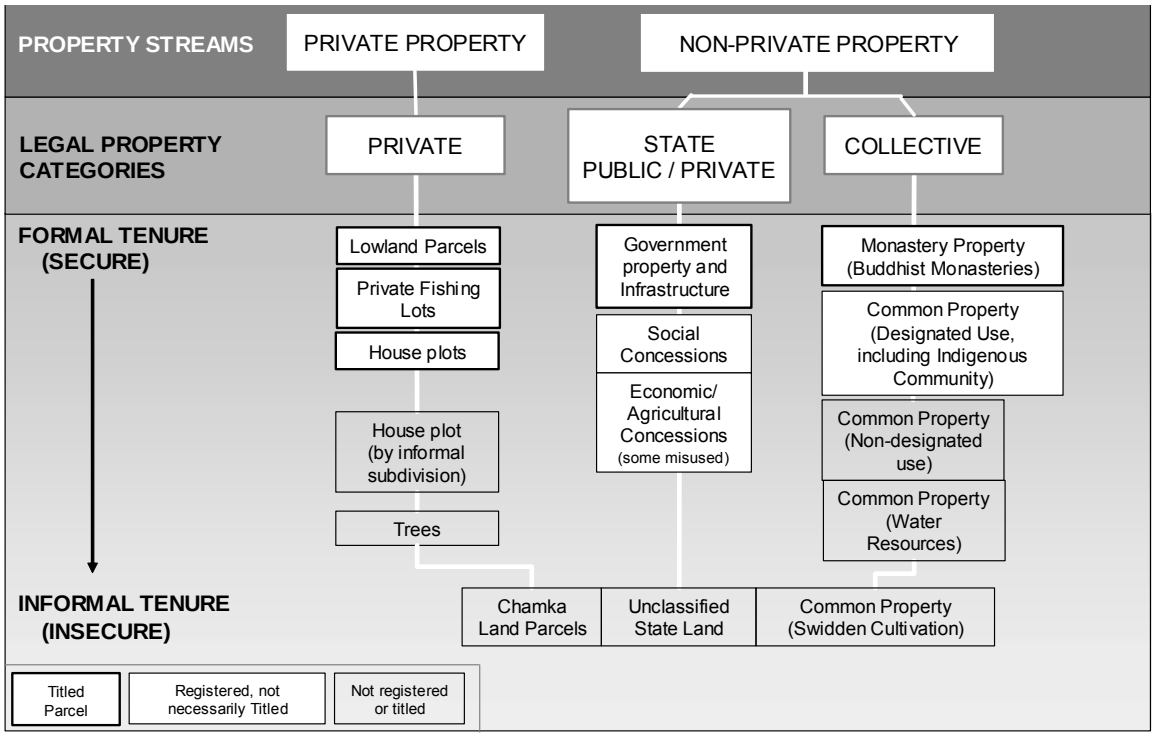
Sustainable development for rural subsistence populations demands land and resource management. Supporting this by coordinated improvements to education, health, and government systems and services are necessary for poverty alleviation.

7.2.2 Extrapolating Cambodian Rural Tenure

Informal land tenure practices are found in most countries. As a developing country, Cambodia experiences a mix of formal and informal tenures, and although substantial formalisation programs such as the Land Management and Administration Project and Seila decentralisation program are in progress, informal practices prevail. Informal arrangements observed in Cambodia among the rural poor were often the result of: coping strategies within one's livelihood means; adaptation to resource availability and seasonally changing environments; the continuation of traditional and familiar practices; and the ineffective implementation of formal ownership and management systems.

The Cambodian law classifies all land into five categories: State Public Property, State Private, Private, Monastery Property and Indigenous Community Property (East West Management Institute, 2003). Despite classification attempts, diverse informal practice continues. Similar to Payne's idea of a continuum of informal to formal urban tenures, there is a continuum in rural arrangements, demonstrating the complexity of on ground scoping. A range of rural tenures from the formally titled and individually owned to informally occupied, communally accessed and locally agreed tenure are illustrated in Figure 27.

Figure 27 – Cambodian Rural Tenure Typology



Projects designed to deliver secure tenure through formal instruments such as an individual land title only secure a proportion of rural peoples' resource needs. These are highlighted in the diagram with bold boxes, where as important secondary resources are less likely to receive registration let alone title and remain informal and perceived legally as insecure. There is also some obvious overlap in the embodiment of tenure for informally used land intersecting private, collective and State interests.

Informal village practices honour security in fields and house plots of the rural poor as these are valuable family assets for realising short term gains of food and shelter, capable of inheritance by other family members. Fiscal values and legal security are often superseded by the strength of the people to land relationship and the local arrangements conferred by village practice. These social norms were found in all three village sites. Land transfers were more often a result of land redistribution among family members after marriage or death not from market transactions.

Rural village populations were closely associated with their land either through ancestral connections, 'homeland' connectivity or communal social practices sharing responsibilities between others. Close, shared and public (open) living and cultivation arrangements both required and encouraged communal responsibility, participation and dialogue. This unity provided a strong sense of village security and social conscience among the group without it being formally imposed, such as through a 'cooperative' agreement. Fears of tenure insecurity were always expressed as threats from 'outsiders', or non-village members. In particular government authority and the powerful elite, as opposed to other villagers, were the most commonly distrusted and feared groups. Local insecurity and fear of outsiders were most common among tenures lacking any potential for gaining formal recognition. Traditional land and resource practices continued, including investing in unregistered subdivisions and transfers, regardless of the informality of tenure, suggesting that embedded village social security provided enough security despite lack of legal or formal recognition. Reasons to disregard formal documentation procedures fell into categories of: avoiding payment of taxes or transaction fees; the desire to stay outside formal procedures; ignorance

and misunderstanding of formal procedures; and fearing formal and legal procedures. Distrust of government authority and lack of education were key problems to formalising traditional societies.

Cambodia has a failing legal system and high incidence of corruption. There is a substantial gap between what is documented and legislated, and reality. In addition, as countries undergo development and new systems are imposed, traditions and long term practices, such as access to public resources and occupation rights to land, are ignored. A summary of the tenure issues observed, documentation options and possible sustainability and poverty alleviation recommendations according to the Cambodia tenure set, is provided in Table 16.

Table 16 - Cambodian Tenure Observations and Recommendations

TYPOLOGY (Use)	**Tenure Issues**	**Record**	**Recommendations to Improve Sustainability and Alleviate Poverty**
Lowland parcel (Permanent rice cultivation and other crops)	High fragmentation Low fertility – limited access to fertilisers and growth enhancements Limited improvements to irrigation	Orthophotos CIM (Cadastral Index Map) Title	Develop policy on minimum parcel size – can be monitored during land titling adjudication. Provide agricultural extension: Improve access to fertilisers, farmer education schemes on multi-cropping options and improved grain varieties. Increase spending on infrastructure for irrigation canals. Need increase to adequate subsistence levels (not currently reached).
House parcel (Shelter Home gardens Wells – communal)	Increased housing density correlated to population growth Reduction in building resources Increasing use of poorly constructed wells and poor quality water Land speculation and false claims on titled plots instigated by authorities during adjudication	Orthophotos CIM Title	Coordinate agreements to allow collection of timber and non-timber products for subsistence from forest areas. Provide agricultural extension: access to seeds, fertilisers and education for home gardening. Provide asset mapping of public wells should be performed during title registration to assist with future planning and valuation. Establish tighter adjudication when assigning land title claims, higher authority given to villager participation.
Chamka parcel / State Land Area (Villagers growing additional vegetable crops)	Insecure use of land and valuable crops Large tract of land mismanaged by the State. Exploited by individuals for short term gains. No incentive for sustainable land use options Environmentally destructive practices negatively impacting on soil fertility and composition and increasing erosion Land speculation Elitist ownership exploits village labour Cannot use land or produce for applying credit	State Land perimeter demarcated, no individual parcels mapped	As a community agreement, develop a Villager and State facilitated lease arrangement scheme incorporated in a natural resource management plan. The management plan ideally balances small scale trade operations with the subsistence use of resources for fuel wood and other non-timber product collection. This agreement would last until the State decided on another purpose for the land, land/produce valued and compensation given to those in possession of productive plots. This gives an incentive for people to not speculate and make productive and valuable cropping decisions. Leasing agreements would only be applicable to local villagers to encourage local labour and investment opportunities. Small loans against leased parcels and produce potential may be investigated.

Table 16 - Cambodian Tenure Observations and Recommendations (continued)

TYPOLOGY (Use)	**Tenure Issues**	**Record**	**Recommendations to Improve Sustainability and Alleviate Poverty**
Common Property (Designated use - Spirit Forest Community Forest Area Monasteries)	Spirit forests holding significant cultural value to some communities whether they are 'classified' indigenous or not These tracts of forest are often not respected by outsiders and are damaged both physically and spiritually	Sometimes demarcated with public signs	Clearly identify spirit forest areas and recognise and protect traditional relationships from outsiders. These areas need to be more consciously acknowledged by adjudication teams and involve additional conditions of conservation management. Further delays in recognition of community and cultural interests will seriously affect social structures and values. A "title" in these circumstances is of little value to the community, particularly because communal titles do not yet exist in practice.
Common Property (Designated use continued)	The value of spirit forests for communities is underestimated and undervalued, particularly when Western systems begin to impose Community forests are typically designated areas with assigned management guidelines/regulations Monasteries do not experience much tenure security threat as this is protected by the popular acceptance of the Buddhist religion among lowland Khmer	Sometimes demarcated with public signs	Minimalist requirements that involve once off boundary identification and a social and environmental assessment as part of a village plan would have more potential. The map would provide instant spatially referenced information, particularly in reference to other boundaries and for resource monitoring. The legal boundary mapping of community forests adopted by natural resource management guidelines and in conjunction with the larger scale national land administration mapping response will significantly enhance the level of tenure security.
Common Property (non-designated Use - Resource access areas Animal Grazing)	Natural resource areas, such as open waters, rivers, embankments etc are an important source of secondary resources Communal resources are being portioned off and titled to illegitimate owners, particularly benefiting more important villagers (i.e. chiefs)	No recording or demarcation	Local practices approve flexible use arrangement of resources among villagers as a coping strategy. This mitigates the need for over regularised arrangements and remains adaptable according to the seasons and resource availability. It is important that these open village areas remain communal and are not placed under falsely claimed ownership. It may not be necessary to map these areas however they should be unambiguously described and addressed in resource management plans so that they remain communal against increasingly individualistic movements to protect continued access for poorer people in the community.

Table 16 - Cambodian Tenure Observations and Recommendations (continued)

TYPOLOGY (Use)	**Tenure Issues**	**Record**	**Recommendations to Improve Sustainability and Alleviate Poverty**
Common Property (Swidden Cultivation)	Swidden agriculture is traditionally carried out in dense forest areas in the north-east of Cambodia, however this technique observed in Pursat and Kampong Thom central provinces was carried out in dry secondary forest areas. These were not ideal conditions for upland rice growing and were more a sign of failed assimilation than poor practice, as well as the impact of exploitive logging practices that destroyed diversity and fertility of large tracts of land without any long term management plan. However these practices provide an important level of food security and make productive use out of otherwise unused resources. The local practice is sustainable in certain environments.	No recording, Demarcated by natural boundaries	Ideally these areas require education in suitable farming practices for this environment, rather than trying to transfer old techniques in a new environment (This assumes that villagers were until recently mainly forest dwellers, which from all accounts is the most likely scenario). Approval for continued access to these areas for agricultural purposes is necessary; however the land value would not require individual titles and local practices should be left to organise the management regime as done previously. A negotiated region should be designated for communal village purposes in compensation. As economic value and needs increase, sporadic titling of valuable crops could be undertaken at the discretion of the community body. A development plan, policy and possibly legislation is required by the State to deal with unallocated State land informally occupied by individuals and that which is not addressed by legislation dealing with adverse possession.
Common Property (Water and Forest Resources- Fishing, Timber and non-timber products)	Access to common pool resources (common property tenure) as already determined, are a necessary component of rural populations' livelihood. Access is increasingly difficult because of increasing regulations and privatisation, diminishing resources and increasing competition between subsistence users and commercial trade. Reduced access to common pool resources is primarily because of illegal methods used by outsiders who are not prosecuted. Forestry resources are increasingly in short supply for villagers to access. Access accounts for 25% of necessary resource for rural populations, however limitations are imposed on collection, areas are off limits to local villagers because of concessions, and competition has exploited resources.	Boundary identification identified with NRM Guidelines CIM	Out of the realm of land administration, Fisheries and Water Resource departments need to be held more responsible for the illegal activities conducted in these areas. Common property resources within a village should be demarcated on Cadastral Index Maps as a priority to match management responsibilities and avoid false private tenure land claims. These areas require natural resource management guidelines that are produced with government authority facilitation, specialist NRM and villager participation to hand over the responsibility and determine the existing use strategies that may be affected. Communal accessibility by villagers, rather than ownership is the main priority to be protected. A sustainable level of resource extraction needs to be balanced among both large company users and traditional subsistence village users.

Table 16 - Cambodian Tenure Observations and Recommendations (continued)

TYPOLOGY (Use)	**Issues**	**Record**	**Recommendations to Improve Sustainability and Alleviate Poverty**
Private Water Resource (Ponds for raising fish)	Self-determined privatisation of resources - ponds are constructed for the purpose of both individual and communal benefits. For example rice fields for harvest and grazing, however the fencing off of these parcels restricts public access.	Restricted titles required	A title may be required for the individual to use in a lending process to buy fingerlings during fish-raising season, however this private agreement should lapse during the off season or when the pond is not being utilised for this purpose.
Concession Area (Company leased resource areas for logging, mining, tourism, agriculture)	Economic and Agricultural Concessions pose a major threat to local communities because they cut off a traditionally regular supply of resources for food, fuel and building materials. If access is still allowed often severe restrictions are imposed and these create significant disturbance to local regimes.	Need to identify in CIM	A significant degree of pre-planning and negotiation could avoid disputes over ownership, and access to both timber and non-timber resources. Ultimately concession agreements are under the authority of the government department – therefore villagers must abide by these rules. There is a need for empowerment of villagers' rights to traditional access rights however this is currently poorly advocated, particularly against Forestry and Fishery authorities.
Trees (Palm/ Coconut)	These did not appear to be largely threatened however they are as an important natural resource among rural populations. These assets provide significant additional income.	Records unnecessary	While documentation is unnecessary the practice of tree crop harvesting should be acknowledged as a traditional practice within land and resource policies and trees possibly considered during village natural resource inventory mapping and management planning to make sure the assets are sustainable. Taxation of this resource should be a last resort for revenue unless the actual produce increased significantly in value.

7.3 Rural Tenure Externalities

7.3.1 Complexity of Rural Tenure

Intractable difficulties and informal arrangements associated with a developing country's rural land contribute to a complex tenure environment. Land and resource use, social hierarchies, and temporal arrangements are also relevant. These conditions and unique arrangements of informal practices significantly hinder the processes and benefits of formal private title documentation. The assignment of individual rights among subsistence rural societies does not capture the dependence on a wider range of resource tenure typologies which foster traditional and sustainable people to land relationships and help to avert poverty.

Elements of acquisition, evidence, boundaries, ownership, relationship, use, duration, value and transfer describe general characteristics of tenure. The following conditions are specific to rural tenure arrangements and affect the use of standard formal registration and security instruments.

Vulnerability and Remoteness Entwined with Survival

In terms of self-provision dependency, most challenges for the rural poor are intimately associated with elements of the physical environment (World Bank, 2003c). As seen in Chapter 4, land tenure security in an agrarian society is analogous with livelihood security intrinsically dependent on the right of access to, and use of, land and natural resources (Maxwell and Wiebe, 1998).

Vulnerability to adverse environmental conditions directly impinges on land use and access to food and livelihood requirements for the rural poor (Moore, 2002). "While all members of a community suffer from external shocks … the poor are often disproportionately affected because they have the least ability to cope" (Klugman, 2002). This was a common phenomenon evident in villagers' desperate accounts of crop failure due to unpredictable rains of both extremes, and declining levels of fish harvesting. Environmental problems, such as flooding, drought or plagues affect all households in the community, some families more quickly and more severely and distressed than others. Limited safety nets make the rural poor especially vulnerable to poverty. They are frequently unable to produce or store surplus stock, retain capital to buy stock, or acquire means to recover from damage, including shelter, equipment and seed stock.

Remoteness also undermines the ability of rural people to enjoy the benefits of secure tenure. Customary and traditional tenure systems (not necessarily minority groups) are typically found in communities in rural and remote areas. Their isolated and removed existence mean their community arrangements are minimally affected by mainstream economic, political, social, cultural and environmental pressures or by external modernities such as commercialisation and institutionalisation. Customary law and tenure systems exist both formally and informally depending on the statutory status of customary recognition within a country. Theoretically these interests should enjoy the same degree of security as other tenures. Slowly groups are leveraging from the ILO Convention No.169 to gain a better status of legality for customary tenure. Distance and isolation from services of urban centres, institutional and regulatory processes, allow many customary or traditional tenure systems to continue functioning irrespective of legal status and requirements. However encroachment and assimilation forced upon these communities are increasing. The clash between traditional land use arrangements and outsider influences can have a significant negative effect on communities. Peoples' rights and traditional customs are ignored and authorities neglect to inform local people of their intentions until logging trucks and 4WD vehicles start making tracks through their occupied territory. With little compensation or explanation, people are forced to adapt to new livelihood conditions. The legacy of Srae Srama villagers and their new settlement is evidence of these activities.

Vulnerability and remoteness of rural societies affect practices constituting rural tenure. Livelihood sustainability is closely associated with reliance on natural resources as the main benefit stream. Securing access and use rights to these resources for the individual and community is crucial.

De facto Authorisation

The rural poor benefit from tenure security in land for assured access, labour and capital investment, and lineage entitlements. Strong tenure security in local systems is regularly attainable through de facto community arrangements. Membership or association with a group can offer a superior level of internal security through bond of mutual trust for its members (Erik de Man, 2001). These

de facto, socially and culturally enforceable arrangements are founded in the cohesive arrangement of a community and rely on traditional methods of interest recognition and dispute resolution. Members of the group, village chiefs/heads, elders, and councils, hold positions of authority for planning, decision-making and adjudication in the group. Whether or not these are equitable, they are often entrenched in tradition and are transparent and trusted among members of the village.

Problems with socially derived systems most often arise from a lack protection or acknowledgement when challenged by claims arising outside the local system which undermine traditional authority and social cohesiveness (Crowley, 2003; McKean, 2000). Without statutory or higher levels of authoritative recognition, informal or perceived tenure security efforts are often lost. Overpowering authorities and elites may also override local decisions or offer incontestable deals to the detriment of local people and their communal village resources. In the most frustrating cases, these deals instigate acts of land speculation or feudal land ownership that force ex-owners to become labourers. Lack of villager empowerment or protection, combined with uninformed and unsustainable allocation of resource rights by authorities and the elite in allocation, affect the independence of rural populations'.

Access to Resources

Secure tenure for the rural poor involves secured access to both land and resources. The access modes are highly variable in practice, and involve resources on private, communal, public and open access land. Access to agricultural land and common property resources provides essential benefits to rural societies increasing food security, income, shelter, and credit opportunities, especially in times of crisis (The World Bank, 2001). Subsistence farming practices, communal trade and collection of natural resources, such as roots, fruits, vines and leaves, often provide resources for daily consumption by rural societies, especially those isolated from large trade routes and markets. Natural resources are used communally and can mitigate extreme poverty by providing supplementary food and other essentials. This was particularly significant for Srae Srama villagers.

Recognition of the resource rights for 'fisher folk and coastal communities, forest dwellers, pastoralists and other traditional resources users' is crucial to ensure accessibility and reduce vulnerability (Moore, 2002). The rights of rural people to graze animals on crop residues, take fallen branches for firewood or collect medicinal plants from hedgerows are critical for livelihood survival of the poor (Weibe, et al., 1998). As countries develop and open their resources onto the international market, larger threats of mining and forestry undermine access and use practices of local groups. Tenure security solutions over simplify the complex relationship of local users as individuals, and as groups. Failure to look beyond immediate resources and the village areas may cut off the supply of food and fuel and instigate or increase destructive livelihood techniques. An example was observed in Ou Ta Prok where swidden rice cultivation in mangrove forests was recently adopted.

Poor rural people are often mobile and dynamic as they find means to access resources. Static tenure rights applicable in formal urban and rural scenarios are therefore inapplicable and too inflexible. Moreover, legislation designed to protect people's access rights also failed. Ambiguous and disregarded laws stipulating 'subsistence' access rights across multiple natural resources did not settle the conflict of interests and priorities among the various line agencies.

Informal Communal Approach

The relationship of rural people to land typically involves reliance on communal resources. In contrast to Hardin's (1968) argument, modern management strategies shifted from private interests to collective action and communal resource user approaches. Resource based communities demonstrated successful sustainable resource management based on localised and participatory relationships. The success or failure of large scale and long-term environmental pressures and current management practices are difficult to assess during short study periods and within rapidly changing societies. It is difficult to measure whether current practices are sustainable against new influences and pressures in the society to promote economic development and improved livelihoods.

Securing community resource rights and management techniques for extended periods of time are difficult because government authorities are reluctant to

devolve power to communities and lose potential economic opportunities (Mansuri and Rao, 2004). Without long term and guaranteed secure group arrangements, a true example of sustainable collective action is unlikely to be observed because external pressures continue to undermine traditional values and practices.

Informal and communal actions are deliberate attempts by communities to cope within their social and natural environment. Breaching of laws or regulation mainly eventuated because they were often enacted without acknowledging traditional relationships with the land.

Social and Unique Tenure Traditions

Diverse cultures and environments in rural scenarios allow unique tenure systems and practices to develop. Social, spiritual and stewardship responsibilities form complex and unique people to land relationships among indigenous communities (Crowley, 2003). These practices incorporate local measures of tenure security and diverge from the normative behaviour and common procedures recognised in Western systems. Practices of traditional and indigenous communities are often misinterpreted when examined by Western standards of tenure and cultural systems (Crowley, 2003).

Differing tenure practices of indigenous Australians were identified by Brazenor (1999) in terms of ownership, evidence, conceptualisation of land, boundary delineation, transfer processes, rights, restrictions and responsibilities. Anthropological studies find culture and land inseparable among customary cultures (Crowley, 2003) and suggest a myriad of attributes influence people to land relationship. Differences of customary and indigenous communities include: landscape, language, law, ceremony, kinship, politics, histories, seasons, geography, human impact, and spiritual integrity (Geisler, 2000). Land distribution is typically communal where arrangements among the group may be expressed through permission and invitations, self-restraints and implications, rather than prescribed and formalised rights, restrictions and responsibilities bounded by legal principles and institutions. A sense of immediate tenure security is maintained through respected oral agreements and established or inherited user claims. Building interventions up from a base that explicitly understands

interactions between social and natural environments will be more conducive to sustainable productive use (Bromley, et al., 1989). Unique people to land relationships of indigenous groups and the aspirations of these people to exercise control over their own institutions, whether formal or informal is recognised officially in the ILO Convention No. 169 and supported by objectives in Agenda 21.

Post Conflict Disturbance Patterns

Land and other natural resources are often causalities of conflict and violence (Augustinus and Barry, 2004; OECD, 2004). Conflict causes human and physical devastation. The failure of fundamental systems of law, governance, economies and social security during disturbances, requires substantial restoration processes to return society to a safe and functioning order. Desperate and tenuous people to land relationships, false land claims, mass relocation and migration of people, disturbance of traditional regimes, and dependent and marginalised people emerge during conflicts. These are often combined with a lack of resources and exacerbate levels of social distrust and angst.

Land administration projects are considered important operational and institutional tools in reconstruction, underpinning human settlement and home security, resource and infrastructure planning, market development, and having the capacity for revenue raising (Van de Molen, 2004). However, classic property rights systems may not be desirable in all areas of post conflict. Limitations and rigidity of conventional methods are thought to trigger further discord (Augustinus and Barry, 2004). Recommendations by Augustinus and Barry (2004) propose a ‘soft systems’ approach to land registration that is more pragmatic, evaluative and analytical, to deal with the diversity and dynamism of land arrangements in post conflict societies.

The disorder and destruction of land arrangements and resources caused by conflict are most severe for dependant populations. Disputes over unsettled, unclaimed and unclear land arrangements become very serious and volatile issues. The identification and adjudication process suitable for these areas involve complicated balancing of opportunities for dispossessed, relocated and re-

distributed groups. Honouring traditional arrangements, while creating new tenures for post conflict regimes, is highly contentious.

Product, Labour and Food Markets

Production, labour and food security are important themes that directly address poverty and are intrinsically linked to land tenure access and security for rural societies. The strong correlation between secure tenure and increased productivity following agricultural investments was confirmed by Feder's (1988) observations in Thailand. Investment inputs may include increased labour, technology improvements, intensified or modified cropping, and fertiliser inputs. These require confidence that a credit organisation or group will acknowledge the tenure and accept land as collateral. This is not a spin off of land administration; instead it must be an integrated part of the infrastructure if the idea is to be accepted. Increasing productivity beyond subsistence levels greatly increases livelihood security and possible trade and investment opportunities. These circumstances largely relate to people in market or transitional economies where there is a push towards capitalism.

In the absence of tenure security, off farm and secondary employment is difficult to pursue because of constant efforts required to protect unoccupied land from possession by strangers. Increasing opportunities for employment following security of tenure were identified by de Soto (2000) in an urban scenario. Livelihood improvements for the poor were related to the protection available for their homes and work places. This theory can be translated into rural societies where similar supplementary opportunities are gained by spending less time protecting arable land, ensuring fences are not disturbed, and allowing more time for rejuvenation without the threat of adverse possession. Production and farming techniques, labour and employment opportunities, and access to natural resources as a food security buffer are benefits of integrated market scenarios available from secure rural land tenure. The necessary caution in a market based analysis is to apply it where societies want to embrace market ideas and to produce goods beyond the need for subsistence.

Low Land Value

A final condition common to rural tenure that negatively impacts on a market based approach is its inherently low land value. Often the land cannot be used in a land market, let alone a credit market. Land value in most rural areas is comparatively lower than that in urban areas, particularly when the value of the cultivated produce, such as rice, is itself very low, the parcels are small, or the harvest is poor. Even if the land was formally secured, it would have little credit value to use as collateral. Rural poor are discouraged from using their primary asset as collateral in credit procedures as it may result in landlessness and further impoverishment. They prefer informal and lower interest rate borrowing arrangements using animals or labour as collateral through agreements with relatives and other villagers.

Land produces most of the rural poor's food supply or tradeable product to sustain their livelihood. In both the short and long terms, land has a higher social value than any given fiscal value. As an asset of inheritance land has an additional social value, particularly as it often represents attachment to one's 'homeland'. The social value of land in poor rural populations is rarely outweighed by the enticement to sell at market prices. There are some exceptions to this; for example, competition in a market economy or migration to urban centres. Transactions that do occur within poor rural communities are often necessary to help balance the land and labour supply and improve productivity.

7.4 Transferring Knowledge

Twining's analysis of the diffusion of law and transplantation of legal discourse (Twining, 2004) highlights the notion of 'one size fits all' land administration project designs. A better alternative would rely on broad conceptions of law. "One needs to construct a picture that emphasizes the complexity and variety of process" (Twining, 2005). Although land administration theory claims to have moved beyond the single blue print approach, there are few innovative developments for implementation and theory remains significantly isolated from social practice (Lemmen, 2005).

Extremes stretching from individual privately held tenure to open access and informal customary tenures were witnessed in rural Cambodian villages. While a

Western-driven land administration systems was being designed and established for populations making the transition to a market economy, many more of the population continued in their social practices, oblivious of economic development or improvements in their livelihood. Local system rural tenure practices survived principally through persistent land use and management traditions shaped by occupation and authority, environmental resource use, abundance and demand. Rural land tenure practices deeply rooted in poverty adopted informal mechanisms to deal with food insecurities, environmental hazards, health risks, and the survival of traditional systems. At a broader level people to land relationships were shaped according to custom, religion, accessibility to legal instruments and institutions.

The rights of a user in village areas were not generally conveyed outside the locale, although habitual practices were generally understood. Project advisors, who are distanced from local arrangements and involved in development of a country going through transitional stages, must acknowledge local social relationships that foster sustainable tenure security mechanisms as a necessary compromise to formal systems and instruments. The importance of involving anthropologists in both preliminary research and design stages of a land administration project is greatly underestimated. Land administration projects are not just technical; they are fundamentally about documenting people to land relationships, and this is very much a social issue. Therefore a balance among surveyors, economists, lawyers, engineers, and anthropological counterparts is critical (Lemmen, 2005).

The interface between the exporter, The World Bank in most scenarios, and the importer, the country Government on behalf of the real beneficiaries, has the largest potential for creating misconceptions, especially during the transferral and acceptance of project designs and ideas. Political;y motivated and technically driven assignments are formulated in high level agreements that have a façade of delivering sustainable development, poverty alleviation and economic growth to the people. While Malaysia and Thailand enjoyed land project success, the 40 or so other countries that have undergone land administration, management, or titling projects report rather less fortunate experiences. The anticipation of economic

gains and government power as land administration outcomes largely detract from overarching goals of poverty alleviation and sustainable development. Politically instability, corruption and legal failure offer few incentives to overcome manipulative and short sighted behaviour by government officials and powerful elites who take advantage of preferential treatment in land claims.

It is debatable that governments, donors and technical advisors are the most important agents of change for national delivery of land administration projects because a functioning and effective system relies on full participation of the recipient population. However the exchange of concepts between the project designer and the people in villages, towns and urban centres is severely constrained by a deficiency in two-way communication. Twining explains that this is not obvious in the case of material objects like mobile phones or Coca Cola; rather the deficiency is in the ideas behind them and their perceived meaning (Twining, 2005). In this vain, the idea of tenure security, rather than the actual title itself, is most important. The ability to articulate the meaning behind the idea of tenure security to villagers, and not just to deliver the visual title or certificate, is cental poverty alleviation and sustainable development. The reverse also applies. Understanding existing methods and perceptions of tenure security within the belief, value, attitude and skill set of villagers is an important communication exchange for project designers to consider. Twining suggests that embodiment of ideas in the diffusion of law as a process of communicating ideas is now generally accepted. He also suggests the process can be applied to *practices* that need to be interpreted from an internal point of view as the embodiment of ideas gives them meaning (Twining, 2005).

Language, concepts and communication barriers were quickly appreciated during initial interviews and pre-interview discussions. There were some obvious differences. For example, tenure security delivered by LMAP is a surveyed, legal, rights-based mechanism to secure people's private interests in land. By contrast local tenure security is an embedded social concept based on practices of natural resource asset management of both individual and communally occupied areas. Local tenure security was not a foundation for participation in market concepts. It was an inheritable good, a transcending benefit stream from one generation to the

next, the next few months of food security and the last month of labour. Formal tenure through a land title cannot deliver the theoretical benefits of secured land interests and claims, access to credit, increased value, transfer opportunities, decreased disputes and better planning and services, without both the physical infrastructure of support and major changes to people's understanding, belief and trust of systems outside their local institutions and beyond their capacity to influence.

Sustainable development, environment and natural resource management were embedded in traditional social norms. However over the years as their practices were challenged, these longer term values were undermined and more immediate needs took priority. Irreversible change took place. The same authorities who allowed the destruction to occur needed to manage and plan again. Under the watchful eye of international organisations they engaged in 'sustainable development' and 'natural resource management' as exclusive new concepts that required readjustment in attitude, practices and authority. The general theme was for people to act responsibly within their own resources however, when restrictions are not universally applied, competition drastically increases. Conservative and less invasive resource harvesting methods were therefore questioned and often resisted.

The two main issues for rural poverty alleviation are the delivery of security of tenure and delivery of sustainable resource management. These are possible through well designed land administration projects. Bottom-up procedures combined with smooth integration from authorities down to the people are both essential. Engendering trust in a system outside of their social norms, participation in information exchange and increased opportunity for responsibility and self improvement are imperative.

7.5 Formalisation

7.5.1 Transitional Formalisation Model

A transition from informal to formal arrangements is not always necessary. If transition is required a range of options for different situations is essential. This thesis used empirical evidence to show the large gap between the aims and issues

addressed by land administration project designs in developing countries and the circumstances of the intended beneficiaries. Misinterpretation stemed from the generalised assumption that an entire population is able and willing to adapt and benefit from formally imposed and regulated national systems.

A flexible formalisation model is necessary to guide overall strategies in national development for poverty alleviation and sustainable development. Development that tackles poverty issues will undoubtedly face situations dominated by informal practices. Design flexibility capable of dealing with the range of existing procedures, particularly those outside the formal domain and secured in social practice, them is necessary. Ignoring them is not an option.

Community facilitated and participatory based projects make a valuable contribution to the level of integration and communication. This bottom-up approach aims to expand the definition of immediate tenure security needs of the poor – empowerment, investment security, livelihood and natural resource security and protection of inheritance – and to integrate these into formal standards. Advantages of a bottom up approach include better customisation of tenure security needs and methods, decision making and planning according to village or commune resources, and identification of appropriate technical and resource intensive efforts.

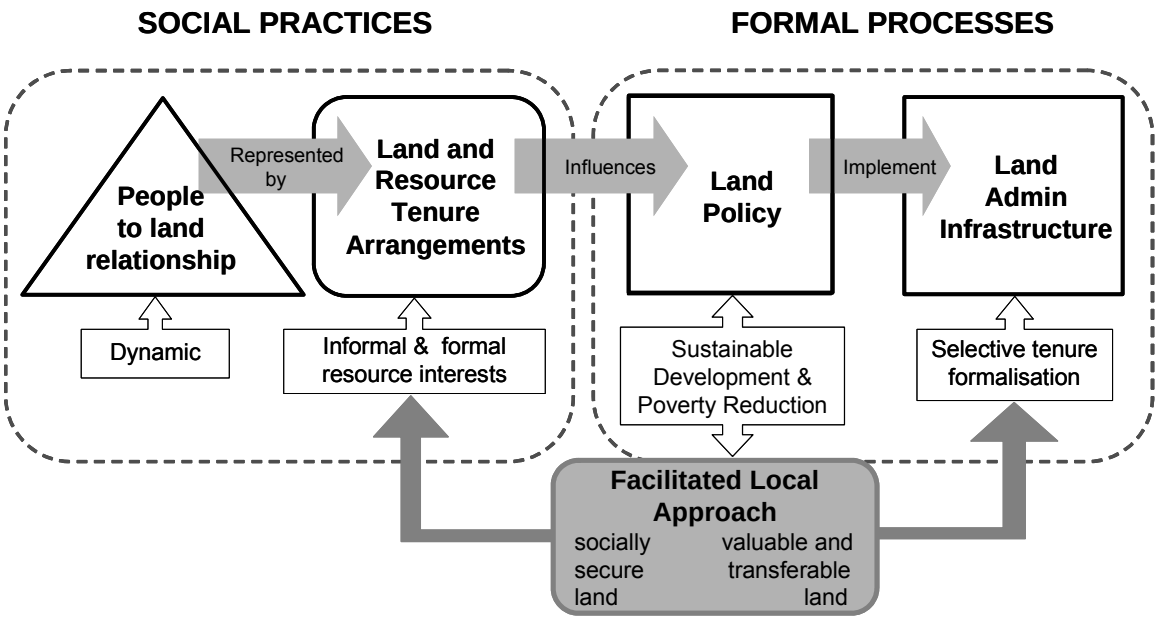
Natural resource management as a component of land administration involves serious diffusion of silo-operated government systems. Tenure security generally delivers incentives to invest effort and resources into an asset. Community based natural resource management, particularly among rural communities, is an increasingly important sustainable development and resource conservation tool. Integration of resource management schemes of national, state or provincial, local and informal levels into a framework for secure tenure will achieve more effective outcomes. Communities and practices ready for integration into market based processes require legally secured processes. Communities that remain largely subsistence, isolated and poor will be less likely to require formal mechanisms (Figure 28). An application based view of this approach is presented in Figure 29.

Empirical field studies suggested moderate amendments to the model for a land administration approach to tenure formalisation in Figure 15, Chapter 5

(Figure 28). These changes reflect the range of subsistence rural poor people to land relationships, and the need to respect these to improve classification of tenure beyond the basic typologies. After a more comprehensive understanding of tenures practiced among the rural poor the need to deliver private land titles as a formalisation instrument for tenure security may or may not be revealed. As an alternative, less intensive instruments that are more socially-complementary to poverty alleviation are required.

Intercepting top down approaches with facilitated and participatory approaches is intended to improve dialogue between project implementers and beneficiaries. Flexible approaches are able to separate the formalisation of tenures of value and significant market potential and tenure that require social security for alleviating poverty and achieving a sustainable livelihood at a minimum. The land administration infrastructure therefore needs to adapt its services to both secure formal market instruments and negotiate incorporation of existing informal arrangements.

Figure 28 - Land Administration Approach to Tenure Formalisation



The next diagram, Figure 29, illustrates three approaches to tenure formalisation impacting different levels of governance, at national, local and individual levels. The three approaches address poverty alleviation and

sustainable development issues over different lengths of time. Land administration programs are long term using statutory instruments of titles and cadastral maps with a strong objective of economic and land market development. Basic infrastructure and development activities directly benefit the individual in the short to medium, before additional maintenance is required through water, sanitation and food programs. These programs deliver immediate poverty alleviation outcomes and aim to build capacity and improve village livelihoods. Community based planning is a newer approach that bridges the gap between these two approaches.

Figure 29 – Stages of Tenure Formalisation

	National	Local	Individual/ Family
Impact Duration	Long Term	Medium to Long Term	Short to Medium Term
Approach	**Land Administration Programs** ⟷	**Community Based Land Use Planning** ⟷	**Rural Development Activities**
Instruments	Land Titles Cadastre	Community sketch maps, natural resource planning	Small scale NGO development activities – water, food, sanitation
Outcome	Economic and Land Market Development	Capacity building at commune/ village level, better resource planning and decision making	Poverty alleviation and capacity building
Legality	Statutory	Limited regularisation	Non-regulatory

Community based land use planning identifies resource issues that can be addressed in the short to medium term by rural development activities, and simultaneously expose longer term and higher level tenure and security issues for consultation by land administration services. Community participatory based planning helps in the identification of issues and builds capacity for local decision making. While this does not necessarily require full scale legal instruments, the process involved should receive formal recognition. This midway approach includes better integration of land management issues and resource planning for sustainable development as part of the larger land administration approach.

These approaches are supported by African experiences examined by Lavinge-Delville (2002a), which highlighted the importance of customary land management principles for rural people, legal dualism, and the role and capacity

of the state to legitimate tenure security. The State needs to "…offer rural people a flexible framework of land-tenure security by encouraging local conventions, agreements, arrangements and arbitration, by defining minimum conditions of their legitimacy and legal validation" (Lavigne-Delville, 2002b). Southeast Asia similarly must deal with customary issues and traditional practices. Of more utility across land administration theory is Lavinge-Delville's move away from legal instruments towards regularisation of land management and the concentration on practices, rather than semantics. His theory is amenable in the large and informal rural sectors in Asia where the "mode of regulation is part and parcel of local logic and does not mean that rules and rights are not present" (Lavigne-Delville, 2002b).

7.5.2 Poverty Reduction Model

Village and commune level case study investigations identified the need for more than one mode of introducing tenure security based on various social dimensions, stages of development and capacity of recipients. Land titling is one predominantly used mode of securing tenure for development of a market-based economy and has significant utility for urban areas. For the subsistence rural poor, tenure practices in all aspects of use, value, distribution and security were less influenced by formal systems and market based integration, than continuing highly accessible and socially secure traditional practices that remained informal.

Land administration and tenure security modes also perform according to customary systems predominantly in African countries, but these are also increasingly used for minority groups found in South America, Asia, Australia, Canada, and New Zealand. The modes of securing customary tenures are slowly evolving through innovative land policies, accommodations of legal dualism and the use of new survey and information technology, such as satellite imagery and GIS. Customary issues were not specifically investigated in this thesis and would require more anthropological studies before modelling.

The third mode for land administration systems and tenure security needs to address the rural and subsistence poor whose people to land relationship is not necessarily market driven. This mode must deal with complex and largely informal tenure arrangements and characteristics. Most importantly it must

attempt to alleviate poverty as a first priority. The following diagram only demonstrates the first market-based, and third, rural subsistence-based modes of tenure driven poverty alleviation model for the rural poor. A framework for delivering a facilitated local approach for project design (Figure 30) acknowledging transitional stages of development unquestionably requires key processes of initial on-ground assessment and continued monitoring and evaluation from the perspective of intended beneficiaries.

Within this framework four basic benefits streams necessary for the survival of the rural poor are identified: shelter, food, land, and fuel and resources. An appropriate land administration system project can provide the necessary secure land and resource access and use rights to these four benefit streams. Assuring security of tenure to these benefit streams is intended to lead to more sustainable livelihood security. Continual monitoring and evaluation of social, economic and environmental factors will ensures the approach remains suitable to the society's development.

Figure 31 then provides details of the means and strategies for improving livelihoods under a market or subsistence economic path. A subsistence path recognises a higher dependence on natural resource acquisition and relates options to social norms and tenure practices as opposed to market-based techniques. The "tenure status" tenure relates to a user's existing capacity to access each particular benefit stream, whether it is formal or informal, secure or insecure, and permanent or temporary. The tenure status of users from different economic paths will differ, using various strategies to secure benefit streams which primarily involve their rights of ownership, occupation, and access. According to the existing tenure status, strategies and "tools" for improving security of tenure are suggested to help maintain access to the separate benefit streams and therefore improve livelihoods by reducing the onset of poverty and encouraging sustainable activities. Reassessment of the use of tools and the status of tenure is a necessary and ongoing responsibility of a land administration system during development, particularly one that has a large focus of establishing a formal infrastructure for a market economy.

Figure 30 - Facilitated Local Approach

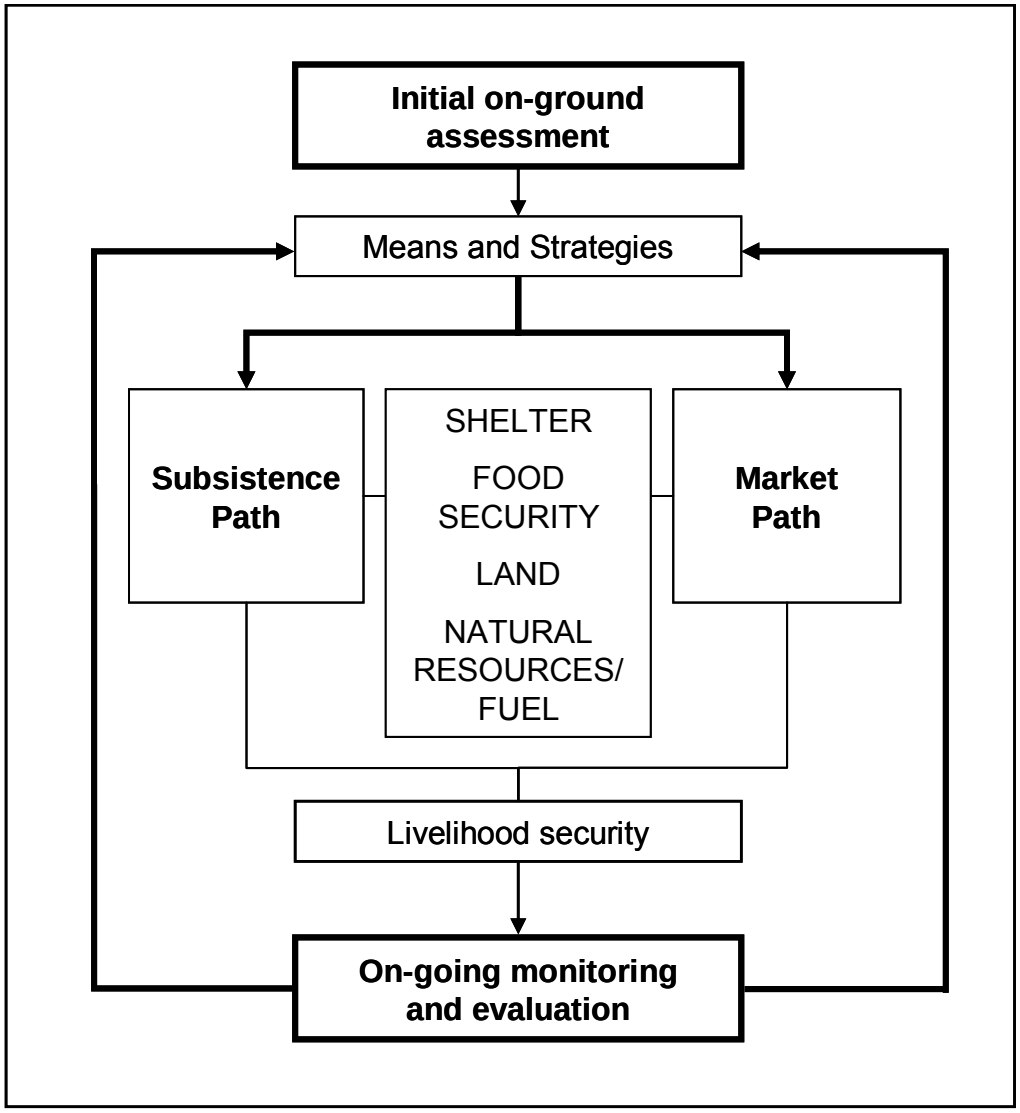
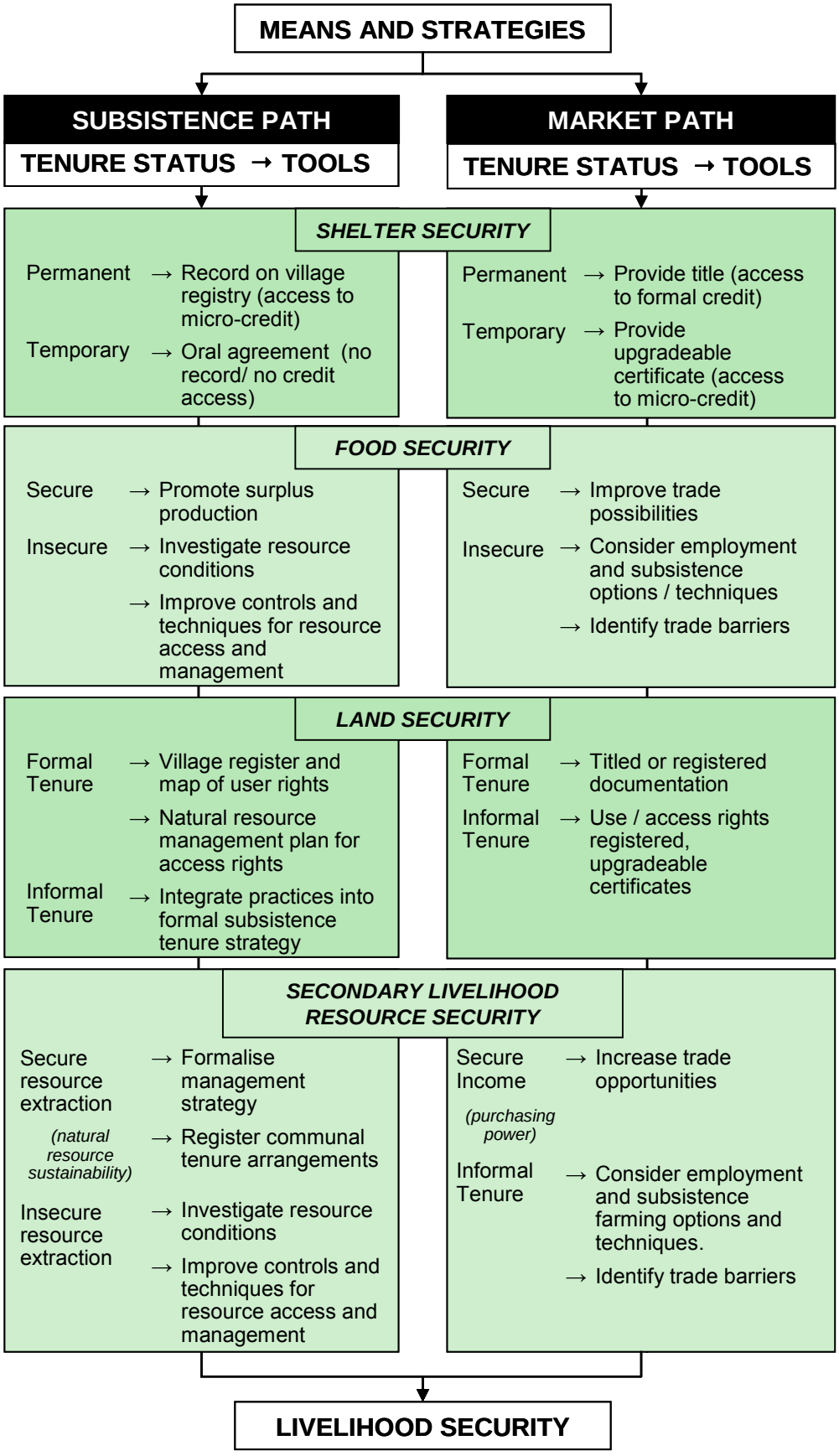


Figure 31 - Means and Strategies of Facilitated Local Approach



This extrapolation of resource tenures and security tools is important for consideration of the way security measures are imposed when establishing land administration systems in different groups of society. Acknowledging the different relationships between groups of people and their surroundings, particularly the land and natural resources for subsistence rural farmers, allows the land administration response to recognise different paths and therefore to apply different tools to address the most immediate issues of the beneficiaries. These tools could be included in a more transitional approach to tenure security used in land administration project designs.

7.6 Chapter Summary

People to land relationships are influenced by numerous social, economic and environmental factors. These factors and their influence on the relationship vary between villages, districts, states, and nations. Therefore it is imperative that the factors and issues at both the macro and micro scale are addressed appropriately using land administration and associated service solutions. The features of a robust land title do not accommodate the variable situations presented among rural poor. Different strategies for delivering tenure security to the rural poor need to reflect the hardships they face: vulnerability, de facto authorisation, third party access rights, loss of traditional practices and tenure, historic events, product and labour market and comparatively low land value.

CHAPTER 8 – CONCLUSION AND RECOMMENDATIONS

8.1 Introduction

The internationally accepted strategy of land administration system project development to promote nationwide sustainable development and poverty alleviation through land titling prompted an investigation of tenure practices among the rural poor. Exploration of people to land relationships and security among subsistence livelihoods of the rural poor in Cambodia showed a more complex range of tenures and strong natural resource dependency than previously acknowledged in land administration project design.

People to land relationships are shaped by local social, environmental and economic constraints and opportunities. To capture these, extensive scoping of on-ground arrangements capable of articulating relationships between the rural poor and their natural resources is required if any land administration project design is to have a sustainable impact and achieve poverty alleviation. Project designers must consider approaches that start from the ground up, utilise existing knowledge, and allow sufficient adaptability to reflect evolving circumstances and opportunities.

The recommendations and framework design revealed in this thesis are conceptual and require negotiation before implementation in a land administration system project design. Actual implementation requires overcoming barriers in economics, politics, and legal and administrative systems. The recommendations for a flexible approach to securing tenures will be incorporated in project design as the underlying research theory is consistent with mainstream thinking over the past five years.

8.2 Research Scope

The findings and recommendations of this thesis are not radical solutions but have particular resonance for survival of subsistence dwellers among the rural poor in developing Southeast Asian countries. These people are challenged by similar social, environmental and economic conditions as those experienced by Cambodian villagers. They are distant from, yet threatened by, property markets. The characteristics of these societies include:

- little to no monetary assets
- low land values
- limited market access
- land transferability that predominantly operates through inheritance rather than market conditions
- substantial reliance on participation in communal activities, and
- domination of a local traditional social structure in contrast to the state statutory systems.

Based on factors examined in Chapters 2 to 4, designers of future land administration projects need to recognise that:

1) One third of humankind exhibit subsistence existence which should be preserved (Deininger, 2003).
2) Land administration project design works on converting subsistence patterns into ownership by recognition of individual owners by state surveys and registration of interests.
3) These tools do not fit the land based practices of the subsistence level rural poor (in Southeast Asia).
4) Land administration project designs should incorporate and protect rural poor social practices.

Considering the findings from Chapters 6 and 7, land administration project redesign requires:

- maximisation of learning from initial on ground investigation to identify local pathologies and local solutions,
- a natural resource focus in addition to a land focus,
- assessment of scenarios to determine dual path options,

- stabilisation of existing practices against threats by outsiders including government (education and capacity building campaigns),
- improved partnership and community involvement,
- recognition of the basic tools of land administration systems as vital, however with better prioritisation and selective use, i.e. land use mapping to preside over titling programs and the need to include new management tools, and
- constant evaluation and monitoring of project delivery.

These conditions were illustrated by Figures 30 and 31 in Chapter 7, which detailed the framework, means and strategies of a facilitated local approach for land administration project designs.

The following sections summarise the thesis objectives and provide recommendations applicable to policy makers, land administration project designers and future researchers in land and resource tenure in all societies; some specifically addressing issues for subsistence farmers among the rural poor in Southeast Asia. A number of lessons for developed countries were learnt by conducting studies in a developing nation environment. Because issues of the rural poor were studied through Western theories of sustainable development and tenure security, many recommendations have utility in developed countries that seek to better incorporate environmental and social values in their development.

8.3 Objective 1: Investigating Land Policy for Sustainability

Land policy has changed in the last 30 years. Largely the land policy economic paradigm was softened by environmental and social objectives. Harmful and degrading environmental conditions effecting society engaged our thinking towards natural resource conservation and sustainability in development, not just among the poor, but across all nations. This environmental trend was developed by a growing appreciation of the diversity of people to land relationships. Environmental protection and diversity influenced development stakeholders' willingness to consider alternative strategies to support sustainable development and poverty alleviation. Decentralisation, community participation, and bottom up project design approaches that integrate grass root development organisations, are part of the recent land policy for poverty reduction and development strategy endorsed by The World Bank. The profile of policy

advocacy was particularly strengthened as lending programs are now designed with an initial focus on policy to better inform project design in attempts to realise more sustainable development.

Policy recommendations have universal application, however their resonance among tenuous subsistence farmers in developing countries has dramatic consequences: they may make or break the poverty cycle.

8.3.1 Recommendations

- Land policy must continue to endorse sustainable development, subject to local conditions. Land policy, like land administration systems, should not be considered as a blanket design; it must be flexible and accommodating enough to reflect diverse people to land relationships outside of formal arrangements.
- Decentralisation of authority and awareness of local conditions are important for uncovering local and appropriate solutions that may not be representative of the whole.
- Effective national land policy depends on local research about how to integrate existing social normative land practices into the formal statutory legal and administrative systems. The way land functions to sustain livelihoods among the rural poor needs to be identified and integrated into the national land policy and administrative framework of developing countries.

8.4 Objective 2: Investigating Land Administration Projects for Sustainable Development

Land administration projects are increasingly improving their impact for sustainable development through better policy drivers; however a serious gap persists between design objectives and on-ground implementation. Limitations in land administration project design are due to the majority of solutions targeting market based societies with functioning legal systems. Reality depicts very different scenarios, particularly among the rural poor. A large proportion of project recipients operate outside the law and with minimal market interaction.

Projects are now designed specifically in the context of local conditions in very poor countries and use much more flexible tools and approaches to secure land opportunities. While projects design is unique to the country of

implementation, evidence suggests that all designs need to address urban and rural scenarios separately, and that further alterative tools are required to address market, subsistence, and customary -based societies. These innovations allow land administration project designs to respond to more pro-poor land policies for poverty reduction.

8.4.1 Recommendations

- Land administration projects for the rural poor must incorporate more land management style strategies particularly where legal and administrative systems lack authority and resources. Sustainable land management based on traditional practice should be integrated throughout project design frameworks as formalisation options for developing countries and not be treated as a separate component.
- Land administration system project designers must become more accountable to their objectives of poverty alleviation. This requires closer monitoring at the level of the beneficiaries and finding suitable parameters to measure the benefit streams.
- Implementation success of land administration projects will benefit from further research that investigates sustainable land management techniques of local systems and tenure security.

8.5 Objectives 3 and 4: Exploring the Tenure Component of Land Administration

The focus on Western tenure typologies and systems is outdated relative to our comprehensive understanding of diverse people to land relationships. Land administration projects designers who concentrate on delivering individual private property titles especially for the rural poor have not considered alternatives more appropriate to the nature and capacity of those living in poverty.

The rural poor do not closely associate with formal tenure arrangements that are typically imposed by national land administration systems. In many circumstances formal tenure security for the rural poor imposes an overregulated structure and incomprehensible system for local practices that evolved according to variable social, environmental and economic conditions. Use, management and tenure arrangements are flexible and based on tradition. For rural families, land is

a crucial asset reflecting social and spiritual values. Land markets are usually beyond the capacity of the rural poor physically, financially, and morally. Typically they are unwilling to used land as credit as the risk involves a possible loss of an essential benefit stream (food production). The invested interests of a family in their two, three or ten plots of rice are fiscally negligible, despite their contribution to the yearly food supply of both people and animals in the household. Plots and pieces of land form an inherited foundation for the family. The limited land transfers among villagers are controlled and authorised by local powers from the perspective of maintaining social cohesion as opposed to land markets. Transactions are part of evolving and dynamic social relationships that absorb new comers and redistribute wealth.

For the rural poor, the people to land relationship is intrinsically and critically linked to food security, gender issues, common property natural resources, and collective action. Land and natural resources for the rural poor provide an essential medium in delaying the effects of poverty for which locally sensitive arrangements and controls on access and security of tenure are essential.

8.5.1 Recommendations

- To address these tenure concerns, land administration project designs need to reflect the needs and nature of tenure security, and access to natural resources required by the rural poor. More acute attention to strategies that deliver flexible tenure arrangements is required in the context of other state classifications and uses.
- Research exploration and testing of tenure security instruments that have a flexible capacity to reflect social, environmental and economic transitions, are still required for the rural poor.

8.6 Objective 5: Identifying Limitations of Socially Derived Tenure Arrangements

Traditional, customary and informal tenure arrangements are not without their problems and limitations. Social tenures of the rural poor are: vulnerable and remote; highly variable over time, space and resource use; subsistence, unique and tradition-based; poorly documented; have disputed tenure histories; and have very low resource values. These characteristics of socially derived tenures significantly

hamper attempts to provide a more secure environment for improving people's livelihoods. The separation of land and natural resources, such as tree and water rights also adds to the complexity of rural tenures.

Informal tenure in rural areas of developing countries is not necessarily less secure. Local recognition and management can deliver security however ensuring recognition by outsiders is very difficult. In saying this, best practice solutions typically assimilate informal practices to formal systems using flexible and incremental steps of regularisation and formalisation.

Communal based activities in socially derived tenure settings are important survival techniques that should not be overlooked. Incorporation of community based participation in land administration project designs is essential as it improves dialogue among all stakeholders and deals with issues at the source.

8.6.1 Recommendations

- Limitations of rural poor societies can be understood if land administration projects include extensive scoping of on-ground arrangements which identify the relationship between the rural poor and the land. Land administration system project designers can respond with more applicable strategies to address the tenure and access issues of the rural poor.
- A sustainable land administration project must formalise tenure within the operational scope in which it takes effect. For land administration to deliver sustainable development, a step-wise approach from the very bottom of people to land relationships, to the highest level decision makers require a critical link between socially derived relationships of the rural poor and normative behaviour and systems imposed by the state. Only the simplest arrangements can be assumed until this link also involves obligations on both sides of the coin, where the state provides services and the people assume responsibilities.
- Strengthening of local communal tenures and collective action requires further emphasis and utilization in the project design to improve linkages between socially-derived and formal systems.
- Partial and transitional registry systems are very complex, effort intensive and may potentially instigate conflictive situations as oppose to resolving them.

Limited research on this idea is available. However it could be explored further.

8.7 Objective 6: Integrating Rural Land Tenure for the Poor

Understanding tenure arrangements of the rural poor is less about ownership patterns and abstraction of interests; instead it is concerned with occupational practices and use arrangements socially derived, physically visible and impacting directly on food security. Therefore instruments that organise and manage land and resources used by the rural poor must initially decipher between those who are subsistence users and those ready, or involved in, market-based and capitalist activities.

Land project analysis shows that some tools are more common when land markets are developed. Where they are not, the tools are typically non-technical, practical and used as suits the local purpose. The tools focus on management of land and resources, not property. There are often no concepts of land rights, property rights or commodification of land. Tenure security is unknown; but is inherently accepted. Because the tools are not scientific and are highly local, their results are frequently ignored in the design of land projects where technical assistance concentrates on higher level tools, such as private title. The importance of the management tools used in subsistence living rural villages is that they constitute the social and economic fabric of their people. They are actually vital to their lives. They cannot be ignored and deserve a comprehensive description in any initial project design so that they can be incorporated as far as possible into the formal project, if only through a decision to allow the village to be master of its own informal destiny until more transitional development has occurred.

8.7.1 Recommendations

- Transitional instruments that formalise people to land relationships must recognise evolving village social, economic and environmental dynamics. It is therefore important to identify when and where villagers use the resource or land for subsistence, when they use it for bartering and exchange, and when they use it for markets. A rich selection of instruments and mechanisms in addition to private titles were observed in Cambodia and across other land administration projects to stabilise land among the poor (Table 17). Most

require further research and testing for wider use in land projects in the future: at present acknowledgement alone would be a considerable achievement.

Table 17 - Stabilization of Informal Tenures

Registration Based Instruments:	**Mapping and Land Management Based Instruments cont'd**:
Village titling	Community natural resource management regulations
Block titling	Agreements for continued access to resource for village use
Collective titling	Agreements for continued access to wood for village housing
Land credit programs	Recognition of partial interests
Certificates and occupancy rights for houses	Registration or recording of productive units (trees, ponds, lakes, forest areas)
Local registers and village information systems	Relinquishment of exhausted land
Shelter strategies: anti-eviction	Clearly defined responsibilities for maintenance of resources: pond and irrigation channels
Stabilisation of land access by provision of water, sewerage (MGDs)	Transferable harvest rights
Anti eviction agreements (resource harvesting regulations)	Fallow land policies for conservation
Resource harvesting permission	Controls over fishing systems: management of resources
Buffer zones	**Alternative Methods**:
Royalties to village or indigenous group	Access to education facilities (as a means of intergenerational stabilisation)
Collective responsibility to debt	Recognition of inheritance
Resource registration	Dispute tracking and recording
Mapping and Land Management Based Instruments:	Recognition of systems of incorporation of outsiders into the village group
Land use mapping (by outsider)	Recognition of family units (who is related to whom) especially children
Participatory land use mapping (by villagers)	Collective village responses to emergencies (injury, death, sickness of individuals)
Land use – share cropping, overlapping access and sharing of land for labour for crops	
Land classification schemes using satellite imagery, photogrammetry or aerial maps	

- It is important in land administration projects to use different approaches to different kinds of land. The traditional rural poor, who are subsistence livers and who are neither ready for product markets or land markets, need continuation of their land uses through formal acknowledgement. The key is to protect and stabilise their village use of land and resources from resource takers, especially commercially organised groups. Simple communal tools, such as collective or village representative titles combined with aerial maps for community sketches of land use mapping, are a positive start. As the strength of administrative structures increases, further implementation of cadastral based GIS tools and more accurate boundary mapping in conjunction with legally adjusted village boundaries, can be applied. At all stages dispute resolution tribunals or councils need to facilitate boundary demarcation and ownership or resource claims.
- Rural land tenures must deliver benefit streams towards practical solutions for poverty alleviation in both the short and long term. Stabilising ownership and user rights to resources through mapping or registration needs to be combined with community-based use management strategies. This will ensure a secure and sustainable people to land relationship and deliver access to natural resource benefits streams required by the rural poor. One possibility for a tenure agreement may be a Village Management Lease allowing flexible internal arrangements based on local practices, if they are considered sustainable. The 'ownership' is entrusted to the village, as opposed to individuals and coordinated through formal regulations, depending on which state department (land, forestry, agriculture, water resources, environment) manage the process.
- Providing recyclable frameworks along different paths of development with appropriate means and strategies and monitoring and evaluation sustainable development is ensured.

8.8 Research Conclusion

Research investigations and empirical field studies throughout this thesis demonstrated the complex range of tenures used by the rural poor to survive within the constraints of their social, economic and natural environments. These informal and often communal arrangements do not fit neatly into private titling formalisation strategies of land administration projects. As a result of inappropriate and misguided strategies for subsistence rural poor, sustainable development and poverty alleviation fail.

If a modern land administration project is to be designed for sustainable development and poverty alleviation, the resonance and ability to achieve the cooperation of its intended beneficiaries will depend on how well designers understand the existing system. The project should therefore incorporate the kinds of devices used and understood by locals, even through initial techniques of survey boundary and identification of village land, as a site to be managed by local people according to local methods, is enough to start.

Appropriately designed and locally influenced land use management combined with tenure security tools are absolutely necessary for the rural poor. Neither one without the other can deliver sustainable development or poverty alleviation among the subsistence-based rural poor in Southeast Asia. This demands new instruments, more flexible than a private title, and more comprehensive project designs to support a wider and more complex range of tenures. Transitional stages of formalisation are crucial to engaging local populations for sustainable land use management and development.

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