

Livelihood Diversification, De-agrarianisation and Social Differentiation

Case Studies on Rural Livelihoods from South Africa and Kenya

生業多様化・脱農業化・社会分化—南アフリカ・ケニア農村からの事例研究

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Part I

Livelihood Diversification in Rural Africa

Part I: Livelihood Diversification in Rural Africa

Chapter 1: INTRODUCTION

1.1: Changing Nature of Rural Poverty

Rural areas in sub-Saharan Africa (SSA) are among the most under-developed regions in the world (Kates and Dasgupta 2007). Seventy per cent of the total population there depends on mixed crop-livestock systems (Mortimore 1991; McIntire et al. 1992; Thornton et al. 2002; Kristjanson and Thornton 2004) for their livelihoods. Yet, combinations of arid/semi-arid climate, severe agro-ecological (soil, vegetation) conditions, low levels of infrastructural development and poor government services have created a risky environment for agricultural development. The response of rural populations to such risks has been to diversify their livelihoods into various farm (crop/livestock) and off-farm activities (de Haan 2000).

Initially, African livelihoods were purely for subsistence. Africa's inherent severe physical conditions are thought to have limited agricultural potential. With low levels of population pressure, each household could survive by extensive farming activities. Throughout the 20th century, however, with the increased population pressure, agropastoralists found it challenging to cope with the decreasing resource bases for extensive farming. On the other hand, colonialism and independence led to the expansion of cash economies and public sectors, while education and life-style changes increased cash demand among rural Africans (Welch Jr. 1977). Rural households started to pursue a more diversified livelihood portfolio including off-farm activities, such as regular or casual employment, petty business and trades, urban migration, which provide more reliable sources of income than crop and livestock activities (Ellis 2000).

Therefore, livelihood diversification has long been one of the dominant features of African rural poverty (Ellis 2000) as agro-pastoralists' survival strategies under severe biophysical and economic circumstances. Yet, for the past two decades, there has been accelerated shift in the nature of livelihood diversifications from a more or less subsistence mode to one more involved in off-farm cash income activities (Bryceson 2002) under rapidly changing macro-level political and economic dynamics. Before the 1980s, the majority of SSA countries followed largely an inward-oriented development strategy, and they were largely marginalised and experienced slow growth and stagnation. After the 1980s however, with growing recognition of their disadvantageous positions, many SSA countries increasingly searched for ways to accelerate their participation in the global economy. Some of them significantly liberalised their trade and investment policy regimes as part of Structural Adjustment Programme (SAP) (Takahashi 2001).

In the literature that examines how these liberalisation reforms have affected poverty in developing countries, the concept of globalisation is often used and defined simply as openness to foreign trade and long-term capital flows (Bardhan 2006) or as a process of greater integration

within the world economy through movements of goods and services, capital, technology and (to a lesser extent) labour, which lead increasingly to economic decisions being influenced by global conditions (Jenkins 2004). While some authors claim that SSA has been less affected by globalisation than other developing regions (Dorward et al. 2004), if examining the aggregate economic ‘openness’ indicators and their trends over time, SSA is not behind other developing regions in terms of trade openness, as measured in terms of a trade intensity index (imports and exports relative to GDP in current US\$) as shown in Table 1.1 (Round 2007; cited in Nissanke and Thorbecke 2008). Indeed the trade openness index improved from 55.4 in 1980-84 (69.3 with country weights) to 65.3 (75.7) in 2000-04.

Table 1.1: Global Comparisons of Trade Openness and Growth

	1980-84	1985-89	1990-94	1995-99	2000 04
Trade openness ^a : (X+M)/GDP					
Sub-Saharan Africa	55.4	53	54.8	60.1	65.3
Sub-Saharan Africa (with country weights) ^b	69.3	65.3	68.6	70.4	75.7
Latin America and the Caribbean	27.3	29.2	32	39.3	43.4
South Asia	19.2	17.8	22.4	27.5	32.6
East Asia	29.2	36.6	50.7	59.8	73.9
Eastern Europe and Central Asia	—	—	59.1	67.3	73.9
Middle East and North Africa	57.6	41.5	59.7	54	56.9
World total	37.9	36.6	38.8	43.9	48.5
Growth of GDP per capita (average annual) ^c					
Sub-Saharan Africa	-1.2	-0.2	-2	0.8	1.5
Latin America and the Caribbean	-0.8	0.3	1.7	0.9	0.8
South Asia	3.2	3.6	2.8	4	3.7
East Asia	5.7	6.2	7.7	5.4	6.5
Eastern Europe and Central Asia	—	—	-5.4	1.6	5.3
Middle East and North Africa	0.7	-1.2	1.8	1.7	2.5
World total	0.5	2	0.8	1.7	1.6

a: World Bank, *World Development Indicators* 2005 (calculated from current US\$ estimates).

b: World Bank, *World Development Indicators* 2005 (calculations by Round 2007).

c: World Bank, *World Development Indicators* 2005 (average annual per cent).

Source : Round (2007, table 1) cited in Nissanke and Thorbecke (2008)

Some authors claim that globalisation can contribute to facilitating the process of structural transformation and accelerating economic growth and poverty reduction in developing countries (Nissanke and Thorbecke 2008). However, such causal links from globalisation via openness to growth and poverty reduction very much depend on specific local contexts and initial conditions, i.e., political institutions, physical infrastructure, and investment climate. In that regard, Nissanke and Thorbecke (2008) claim that SSA presents a clear case to support the arguments that shift to the open policy regime alone cannot bring about economic growth and poverty reduction. Table 1.1 shows the growth performance in SSA was poor, while Table 1.2 presents the increase in the poverty incidents, despite the two decades’ reforms dominated by liberalisation, privatisation and deregulation.

Table 1.2: Global Comparisons of Poverty Trends

	1981	1987	1993	1996	2001
<i>Income poverty^a (headcount ratios)</i>					
Sub-Saharan Africa	41.6	46.8	44.1	45.6	46.4
Latin America and the Caribbean	9.7	10.9	11.3	10.7	9.5
South Asia	51.5	45	40.1	36.6	31.3
East Asia	57.7	28	24.9	16.6	14.9
Eastern Europe and Central Asia	0.7	0.4	3.7	4.3	3.6
Middle East and North Africa	5.1	3.2	1.6	2	3.4
World total	40.4	28.4	26.3	22.8	21.1
Ratio: SSA/World	1.03	1.65	1.68	2	2.2
<i>Income poverty^b (numbers million)</i>					
Sub-Saharan Africa	163.6	218.6	242.3	271.4	312.7
Latin America and the Caribbean	35.6	45.1	52	52.2	49.8
South Asia	474.8	473.3	476.2	461.3	431.1
East Asia	795.6	425.6	415.4	286.7	271.3
Eastern Europe and Central Asia	3.1	1.7	17.5	20.1	17
Middle East and North Africa	9.1	6.7	4.1	5.5	7.1
World total	1481.8	1171.2	1207.5	1097.2	1089
Ratio: SSA/World	0.11	0.19	0.2	0.25	0.29

a: World Bank, *World Development Indicators* 2005 (calculated from current US\$ estimates).

b: World Bank, *World Development Indicators* 2005 (calculations by Round 2007).

Source: Round (2007, table 3) cited in Nissanke and Thorbecke (2008)

While the positive impacts of globalisation have not been adequately transmitted to growth and poverty reduction in SSA countries, the openness has definitely exposed rural Africans to wider social dynamics and involved them more in cash economies than ever (Bryceson 2002).

“While returns from commercial agriculture were becoming less certain, daily cash requirements increased under the economic stringency of SAP. In addition to the removal of agricultural subsidies, bankrupt African governments removed subsidies on educational and health services. School fees and user fees at health centres became a high priority in rural household budgets, Price inflation reached rural consumers through rising import costs of agricultural inputs, and enticing consumer goods that private traders brought to village markets” (Bryceson 2002, 729).

One of the reactions by rural households to greater exposure to wider social dynamics is to pursue more diversified livelihood patterns into off-farm income activities to earn ready cash for daily requirements. Increasing livelihood diversification into off-farm activities has in turn accelerated the process of de-agrarianisation, i.e. diverting of rural production and social relations away from a purely agrarian way of life, across rural Africa (Bryceson 2002). Of course, the extents of de-agrarianisation have shown considerable variations across regions, as ‘there are local histories of impoverishment and accumulation just as there are many different local presents, different predicaments, different ways of being locked into markets and different responses’ (Francis 2000). In turn, the de-agrarianisation processes have been accompanied by increasing social differentiation elsewhere, as the availability of remunerative regular off-farm income opportunities has been limited to a few elites while the majority of the less-skilled have resorted to casual jobs (Bryceson 1999).

1.2: Changing Analytical Focus of Rural Poverty

De-agrarianisation processes in Africa correspond to the period when all other developing country regions have shown marked improvement in key indicators of economic development, except for SSA. Understanding African exceptionalism and contributing to its reduction is therefore one of the grand challenges of academics and researchers (Kates and Dasgupta 2007). Then it is essential to acknowledge that there are two dimensions in the features of rural poverty in the contemporary Africa. One dimension is attributed to Africa's inherent biophysical, demographic and historical conditions which have kept investment in agricultural intensification and market development risky. The other dimension includes off-farm income diversification, de-agrarianisation, and social differentiation, which are among the emerging features. Interactions of these two dimensions have complicated developmental challenges in rural Africa.

Until recently, rural development debates rarely paid attention to the emerging features, i.e., livelihood diversification into off-farm activities, or de-agrarianisation (Ellis 2000). Rural Africans were assumed to operate purely as smallholders, and focus was on how to stimulate growth through agriculture (Ellis and Biggs 2001). In the face of economic crises during the 1970s-80s, researchers criticised the urban biased policies as artificially lowering crop prices in order to subsidise their urban constituencies at the expense of rural farmers (Bates 1981; Bates 1983; Bates 1988). Sectoral policy instruments were recommended to remove price distortions across sectors to give rural farmers the right incentives to increase farm production. Liberalisation reforms however generally failed to bring about the desired growth in the agricultural sector, while recessions and downsizing of the states aggravated unemployment (Francis 2000; Bryceson et al. 2000). The fact that rural families operate as farmers as well as wage earners and business people has made their effects on sectoral-policy instruments unpredictable, for changing relative prices are internalised within households rather than acting as an external stimulus to the free movement of resources (Bryceson 1999; Ellis 2000; Bryceson et al. 2000).

Only after the late-1990s, researchers started to extensively carry out household surveys in rural Africa (Deaton 1997), which revealed that farming often provides a surprisingly small proportion of the incomes of rural households relative to off-farm activities (Reardon 1997; Ellis 1998; Francis 2000; Barrett et al. 2001a; Bryceson 2002; Freeman and Ellis 2005). As researchers and policy makers have recognised that rural production and social relations are diverging away from agrarian livelihoods, the livelihood approach has gained popularity as an analytical framework for rural poverty in Africa (Ellis 1998; Ellis and Biggs 2001; Bryceson 2002). The livelihood approach has led the focus of rural poverty analysis from 'an agriculture-centred, sector-level, viewpoint, to a household or individual-level viewpoint' (Ellis 2000).

What does this shift in the focus of rural poverty analysis indicate? The conventional development economic theory supposed that agriculture should play critical roles in early stages

of economic development while an economy is transformed gradually from a structure primarily based on agriculture to more industrialised one. For example, Johnston and Mellor (1961) argued that in the early stages of development in agrarian dominated economies, agriculture generates export earnings, labour, capital and domestic demand to support growth in other sectors, and agricultural products meet increasing domestic demands from increasing populations with high income elasticity of demand for food. Yet, contemporary realities suggest that the model to rely on pro-poor agricultural growth as the main weapon against rural poverty, which were proved successful in some developing regions in the past with agriculture having provided the main engine of growth, may no longer be applicable to SSA today (Dorward et al. 2004).

The starting point of the livelihood study is to understand what people are actually doing and striving to make a living in rural Africa. Empirical evidence from rural Africa should contribute to refining development theories as well as methodologies of rural poverty analyses. The major research agenda of this study is to reveal the multi-dimensional features of rural poverty in the contemporary Africa. To answer this, it is necessary not only to understand the driving factors of the emerging features, i.e., livelihood diversification, as individuals' response to opportunities and risk provided by greater exposure to wider social dynamics, but also to assess such impacts of off-farm income livelihood diversification, de-agrarianisation and increasing social differentiation, on rural social relations which were initially defined by Africa's inherent conditions.

The rest of this introductory Chapter reviews some key themes in the livelihood literature: motivations of livelihood diversification (Section 1.3), de-agrarianisation processes (Section 1.4), regional diversity (Section 1.5), and local processes of social differentiation (Section 1.6). Section 1.7 states the objectives of and the organisation of the dissertation.

1.3: Motivations of Livelihood Diversification

African rural development has been constrained by a range of causes, namely arid/semi-arid climate with high probability of drought, unfavourable agro-ecological conditions, low levels of market and infrastructural development, and poor provision of government services. In response to a risky environment, African rural populations have always pursued a portfolio of diverse livelihood activities for survival. Livelihood diversification is generally regarded as the micro-level response to risky environments on one hand and to economic opportunities on the other hand (Ellis 2000; Francis 2000). There should be various motivations of diversification, from dealing with seasonality, coping with incomplete markets and managing risk (Barrett et al. 2001a). As the environment changes, rural households attempt to adapt themselves to new constraints and opportunities. Below I briefly review popular assumptions in the livelihood literature on what motivates households to diversify their incomes: risk management, seasonal and interpersonal aggregation, missing or incomplete markets, and economies of scope.

Most livelihood literature regards risk management or self-insurance, especially against climatic

risk, as one of the most critical motivations for diversification (Evans and Ngau 1991; Reardon and Taylor 1996; Bryceson 1999; Ellis 2000; Francis 2000; de Haan 2000; Bryceson et al. 2000; Barrett et al. 2001a; Barrett et al. 2001b). In economics terms, self-insurance is an *ex ante* concept of risk mitigation in which people exchange some foregone expected earnings for reduced income variability achieved by selecting a portfolio of activities across sectors or space that have low or negative correlation of incomes across sectors (Barrett et al. 2001a). The poor are expected to be more risk averse and thus more likely to diversify than the wealthy are. However, evidence to the contrary is presented that diversification rises with wealth or income in rural Africa (Reardon 1997). Therefore, while risk in a broader definition remains a key factor, additional explanations are needed to understand the behaviour of diversification.

Ellis (1998, 2000) suggests that household-level diversification does not necessarily contradict with individual-level specialisation, referring to empirical findings from rural Africa that higher income groups have individual members specialised in distinctive occupations across sectors or engaged in different activities across dry and wet seasons. Household-level diversification may result from aggregating engagement in different activities across seasons or by individual members (Barrett et al. 2001a). Households may allocate labour to off-farm activities during slack seasons. Returns to labour or comparative advantage are also heterogeneous often along sexual lines, which are defined physically as well as culturally in a particular rural African context. For example, in southern Africa, anthropologists observed African men taking care of livestock or working as migrant labour and women being responsible for arable plots and household tasks (Hunter 1979).

The lack of production markets also motivates households to diversify production patterns partly to satisfy their own demand for diversity in consumption. Furthermore, if credit markets are thin or missing, rural households may seek non-farm earnings which can be a crucial means to overcome working capital constraints to purchasing necessary inputs for farming (e.g. fertiliser, seeds, equipment, labour) or to making capital improvements (e.g. ridges, irrigation) (Barrett et al. 2001a; Barrett et al. 2002; Place et al. 2002a; Place et al. 2002b).

While diversifying into on- and off-farm activities, rural households often adopt a portfolio of various crops and livestock types (Benin et al. 2004; Lacy 2006; Tittone et al. 2005; Iiyama 2006a; Iiyama 2006b; 2007a; 2007b). Risk management cannot adequately explain diversity within farming, especially across crops, since the yields of different crops are highly covariate (Barrett et al. 2001a). Rather, households may try to achieve 'economies of scope' in production with which the same inputs generate greater per-unit profits when spread across multiple outputs than when dedicated to any one output (Barrett et al. 2001a). The concept differs from that of economies of scale, which favour specialisation. Crop rotation and integrated crop-livestock systems are widely recommended by international agricultural research institutes as solutions for poor rural households to efficiently utilise inputs, and are already reported to be spread in areas with high population density (Mortimore 1991; McIntire et al. 1992; Thornton and Herrero 2001; Manyong et al. 2006; Herrero et al. 2007).

1.4: From Subsistence to De-Agrarianisation

The motivation that affects the decisions of households to diversify their incomes may not only depend on particular local contexts but also change over time in response to the changing environment. The nature of livelihood diversification has thus been continuously changing. This section reviews general trends of changing livelihoods observed widely across sub-Saharan Africa.

Initially, African livelihoods were purely for subsistence. Physical constraints, such as severe climatic and agro-ecological conditions, are thought to have limited agricultural potential and carrying capacity of the land (Boserup 1965; Platteau 2000; Raikes 2000). With low levels of population pressure, each household could practise extensive farming activities (Boserup 1990; Mortimore 1991; McIntire et al. 1992), by allocating family labour according to their comparative advantages, i.e. men took care of livestock while women tended arable plots (Hunter 1979; Raikes 2000). Customary land tenure systems were loosely organised to guarantee community members usufruct rights to arable plots and grazing rights on commonage, and consequently social differentiation was not so marked (Welch Jr. 1977; Hyden 1980; Beinart 1982; Low 1986; Bundy 1988). The absence of completely landless sub-populations was in turn closely associated with low levels of specialisation, as division of labour was within households rather than between households (Hyden 1980).

Throughout the 20th century, colonialism and independence brought about tremendous changes to rural livelihoods. Where white farmers came to settle in substantial numbers, such as in the eastern and southern Africa, the colonial governments often exercised coercive means to expropriate land in agriculturally high potential zones from indigenous populations and pushed them into designated native reserves in agriculturally marginal zones (Welch Jr. 1977; Beinart et al. 1986; Bundy 1988; Beinart and Dubow 1995; Mamdani 1996; Yoshida 1997; Mine 1999; Bryceson et al. 2000; Kitagawa 2001). With the increased population pressure, agropastoralists found it challenging to cope with the decreasing resource bases (Hayami 1997; Otsuka and Place 2001). For most poor rural families, farming on its own could no longer provide sufficient means of survival (Ellis 2000; Francis 2000; Bryceson 2002).

Colonialism also brought rural Africans into cash economies through paying taxes, buying food, and selling their crops and their labour. Since then, education as well as greater exposure to wider social dynamics since the implementation of liberalisation reforms in the 1980s-90s has further promoted lifestyle changes from subsistence to Westernised consumption patterns (Francis 2000; Bryceson et al. 2000; Bryceson 2002). Expanding urban economies and public sectors (i.e. offices, schools) provided opportunities to earn cash. While returns from farming may fluctuate highly due to risks of crop failure and animal diseases, off-farm activities provide more reliable sources of income (Reardon 1997; Ellis 1998; Ellis 2000; Bryceson et al. 2000; Barrett et al. 2001a; Bryceson 2002; Tiffen 2003; Ellis and Freeman 2005). Rural households have pursued a more diversified portfolio of activities by reallocating their members to activities according to their comparative advantages, i.e. men on migrant labour, women and the aged on subsistence

farming (Low 1986).

Several reviews confirm some discernable patterns that non-farm/off-farm incomes predominate over farm incomes in many African settings (Ellis 1998; Bryceson et al.2000). Reviewing 23 case studies conducted from the 1970s to the early 1990s in regions distributed over Eastern, Western and Southern Africa, Reardon (1997) shows that on average between 30% and 50% (a range between 15% [Mozambique] and 93% [Namibia]) of rural household income was derived from non-farm sources. Bryceson (2002) provides higher figures for the contribution of off-farm activities to total income, ranging between 60% and 80%, based on data from systematic surveys conducted in 6 African countries during the late 1990s (Bryceson 2002), attributing the increase from Reardon's estimate to the impacts of trade liberalisation under SAPs in many of the SSA countries.

Bryceson has called these phenomena 'de-agrarianisation', defined as 'economic sectoral change arising from contraction of rural populations that derive their livelihood from agriculture' (Bryceson et al.2000) or 'a long-term process of occupational adjustment, income earning reorientation, social identification and spatial relocation of rural dwellers away from strictly agricultural-based modes of livelihood' (Bryceson 1999; Bryceson 2002).

1.5: Regional Diversity in the Extents of De-Agrarianisation

While de-agrarianisation (i.e. increasing dominance of off-farm income activities over farming in rural livelihoods) seems to be a universal phenomenon today, its processes have been diverse across regions within Africa (Bryceson et al.2000). Many livelihood studies have specially attempted to empirically examine the impact of diversification into off-farm activities on farm output by examining reinvestment of off-farm earnings, especially urban earnings, in improving farming capital (Evans and Ngau 1991; McIntire et al. 1992; Francis and Hoddinott 1993; Tiffen et al. 1994; Ellis and Freeman 2005). Comparative reviews suggest that the effects of de-agrarianisation on agricultural intensification are spatially and temporally specific, reflecting diverse local histories, state policies, and agro-ecological, demographic and political conditions (Bryceson 1999; Bryceson et al.2000; Francis 2000; Ellis 2000).

For example, case studies from South Africa and Kenya, the major regional economic power in the southern and eastern Africa respectively, provide contrasting findings on the degrees and directions of de-agrarianisation (Ellis 2000). In both Southern and Eastern Africa, during the earlier colonial periods, European settlers took over much of the high potential agricultural land and pushed Africans into increasingly crowded reserves (Welch Jr.1977; Yoshida 1997; Mine 1999). Colonial governments devised policies to suppress commercial farming by Africans in reserves to induce migrant labour to mines or farms. By the 1930s, the collapse of reserve agriculture was reported in both regions due to serious soil erosion and environmental degradation (Bundy 1988; Tiffen et al.1994).

After the 1940s, however, state policies in the southern and eastern Africa diverged (Yoshida 1997). During the industrialisation initiated by the mining sector, the South African government further suppressed African farming under the segregated regime (Ntsebeza and Hall 2007). As Bundy (1988) documents in *Rise and Fall of the South African Peasantry*, by the mid-20th century, most adult males were absent from home to work in thriving mines, factories or white farms, and the relative contribution of farming to livelihoods became increasingly marginal against remittances and other transfer incomes. Temporary increases in real wages in the mining sector during the 1970s further accelerated the de-agrarianisation process (Low 1986). The process was not reversed after the 1980s, when falling gold prices and the restructuring of the industry led to large-scale job losses. Today most rural households with unemployed adults survive on the state welfare system, with which food and necessities are purchased, while most arable fields except home gardens are not even cultivated (Francis 2000; McAllister 2001; Andrew et al. 2003; Bank 2005).

In the 1950s the Kenyan colonial government reversed its policies and promoted African smallholder farming by allowing them to grow high-value cash crops. The post-colonial state continued this practice and implemented land redistribution in some parts of the country (Francis 2000). In zones either adjacent to large markets, such as central and parts of eastern Kenya, or with high agricultural potential, such as the white highlands (land formerly settled by Europeans), rural households reinvested their urban earnings in improving farming technologies (Collier and Lal 1984; Evans and Ngau 1991). As Tiffen et al. (1994) document in their well-known book *More People, Less Erosion*, these households also invested off-farm incomes in various soil conservation measures (e.g. terraces) to reverse environmental degradation which had been aggravated by severe population pressure. This pattern, however, does not necessarily apply to remote areas, where investment in education is regarded more promising to secure rural livelihoods than in agriculture (Francis and Hoddinott 1993; Francis 2000).

By the late 20th century, de-agrarianisation resulted in ‘the stagnation of farming in the southern African periphery’ (Low 1986), and ‘greening’ of Machakos District (eastern Kenya) (Tiffen et al. 1994), though Ellis (2000) judges that they are rather extreme examples. A comparison of economic indicators for South Africa and Kenya is given in Table 1.3. The per capita annual income in South Africa is over US\$ 3,000, ranking it among the upper middle-income countries. However, this figure masks a substantial income disparity in the country whose wealth is still concentrated in the white population and thus overestimates the income levels of rural Africans. The South African economy is largely industrialised and agriculture accounts for only 3% of its GDP. Although 38% of the population still reside in the rural areas of the former homelands, their dominant cash income sources are pension, wages or remittances; land-based activities rarely yield cash. In contrast, Kenya is classified as a typical low income African country, with a per capita annual income of US\$ 400-500. An estimated 66% of the population reside in rural areas. Yet, the share of agriculture to GDP has been gradually shrinking and is currently 27%. Different consequences of the diversification into off-farm activities on agricultural intensification are due to local-specific historical backgrounds, policies and market/infrastructure which will require further empirical investigation through comparative studies.

Table 1.3: Economic and Social Indicators of South Africa and Kenya

	South Africa		Kenya	
	2000	2005	2000	2005
<i>statistics*</i>				
surface area(sq.km)	1,2 million	1,2 million	580.4 thousand	580.4 thousand
population, total	44.0 million	46.9 million	30.7 million	34.3 million
population growth (annual%)	2.5	1.1	2.2	2.3
GDP (current US\$)	132.9 billion	242.1 billion	12.7 billion	19.2 billion
GDP per capita (US\$)	3,020	5,162	414	560
GDP growth (annual %)	4.2	5.1	0.6	5.8
inflation (annual %)	8.8	4.8	6.1	7.2
agriculture, value added (% of GDP)	3.3	2.5	32.4	27.0
industry, value added (% of GDP)	31.8	30.3	16.9	18.5
services, etc., value added (% of GDP)	64.9	67.1	50.7	54.4
rural population share (%)	38.3		66.0	
dominant rural income sources	pension, wage, remittances casual work, small business		crop / livestock incomes charcoal making	
<i>openness indicators**</i>				
exports of goods & services (% of GDP)	27.9	26.8	21.6	26.7
imports of goods & services (% of GDP)	24.9	28.3	29.6	34.1
openess = exports+imports as % of GDP	52.8	55.1	51.2	60.8
main export	gold, diamonds, platinum other metals and minerals machinery and equipment		tea, horticultural products coffee, petroleum products fish, cement	

(Sources) *:World Development Indicators database, April 2007 (<http://devdata.worldbank.org>)

** : Global Integrity Report 2006 (<http://www.globalintegrity.org/report>)

1.6: Local Processes of Social Differentiation

The processes of de-agrarianisation, though diverse across regions, have coincided with increasing exposures of African national economies to the global economy and structural unemployment (Bryceson 1999; Francis 2000; Bryceson et al. 2000). Both South Africa and Kenya are among the top ten developing countries in terms of the largest proportionate tariff reductions since the early 1980s, and especially during the 1990s (Rodrik 2000, and Dollar and Kraay 2001 cited in Jenkins 2004) while the openness indicator, majored as the value of exports plus imports as a percentage of GDP, has improved recently as shown in Table 1.3. In South Africa, while the state attempted to control the foreign capital flows during the political crises and the state emergency in the 1980s, there have been major changes in the 1990s in terms of its insertion into the global economy as a result of the ending of apartheid regime (Jenkins 2004). Kenya has also become more open during

this period, although not in such dramatic circumstances. Kenya is among those developing countries which had the largest tariff reductions between the late 1980s and the late 1990s, and regarded as an African success story in terms of exports of horticultural products (Jenkins 2004).

Yet, the openness to the global economy has failed to bring about sufficient employment growth (Jenkins 2004; Nissanke and Thorbecke 2008). Both in South Africa and in Kenya, the rate of unemployment has steadily increased since the late 1970s to around 40% in the early 21st century, and it often exceeds 50% in rural areas, especially among the unskilled and the youth (van der Burg et al. 2002; Kington and Knight 2004). As few opportunities for remunerative employment are available only for a small number of highly educated/skilled workers, off-farm income diversification has accentuated rural social differentiation between regular and casual income earners (Bryceson 1999; Francis 2000; Bryceson et al. 2000). Educational attainment is one of the most important determinants of salaried and skilled employment, while the uneducated, women, and youth rarely enjoy the same access to remunerative opportunities as do educated males (Reardon 1997; Francis 2000; Barrett et al. 2001a). As a result, the poor have little choice but to diversify into unskilled off-farm labour.

Local processes of social differentiation are spatially diverse. In South Africa, social differentiation has been accompanied by disintegration of family relations and collapse of subsistence farming. Except for a few educated local employees or small business owners, many rural households have lost their main source of livelihood due to urban unemployment (Carter and May 1999; Carter and May 2001). In the transition from apartheid to democracy in 1994, the state welfare system was equalised for Africans and old-age pension replaced remittances as a major off-farm source of income (Leibbrandt et al. 1996; Leibbrandt et al. 2000; Bank 2005; Eastwood et al. 2006). This has shifted the balance of economic power from male-headed household to pension-dependent households. Furthermore, increasing social differentiation has led to the replacement of communal work by expensive ploughing service by a few tractor owners in villages. While land redistribution in the crowded former reserves to alleviate poverty is deemed urgent in South Africa (Ntsebeza and Hall 2007), paradoxically poor households are unable even to cultivate their small arable fields as they cannot afford to spend cash in necessary inputs and implements (Beinart 1992; McAllister 1992; McAllister 2001; Andrew et al. 2003; Bradstock 2005; Eastwood et al. 2006). As a result, some authors question the feasibility of agrarian reforms aimed at empowering rural households as they no longer function as a decision-making unit in rural production (Francis 2000; Bank 2005).

In Kenya, in contrast, social differentiation has brought about a governance problem on common natural resources. Unlike in rural South Africa, rural populations cannot depend on the government for a safety net. Only a few educated sub-populations are able to gain regular employment at schools, government or NGO offices, or run small business (Francis and Hoddinott 1993). They are willing to adopt new cash crops or improved dairy breeds, and to use resources more intensively and exclusively under the customary land tenure arrangements (Ikeno 1989; Evans and Ngau 1991; Tittonell et al. 2005). However, a substantial number of the Kenyan youth drop out of school today. They rarely have the means to cultivate their arable plots and seldom own livestock, but survive by felling trees in the communal areas and selling charcoal locally or in markets at regional towns to earn ready cash (Freeman and Ellis 2005). This is an issue of serious governance

and environmental concern, as these poor households depending on exploiting natural resources often account for a third of rural population (Iiyama 2006a; Iiyama et al.2008).

Despite regional diversities, de-agrarianisation and social differentiation along differential access to non-agrarian incomes and assets are emerging features of rural Africa (Ellis 2000; Bryceson et al. 2000). According to Bryceson (1999), it is recognised in rural Africa that income diversification switches from being a coping to an accumulation strategy when pursued by wealthy and medium-income households. Involvement in off-farm activities, especially at a high level of skill and spatial mobility, may provide a means of accumulation to some better-positioned households. The superior skills and asset endowments of wealthier households yield far greater returns than poorer households with fewer off-farm agrarian skills, means of transport and essential contacts. Poor households in turn harvest less in bad weather years and have little choice but to pursue off-agrarian income-earning activities in easy-entry markets that are already saturated. Thus, over time income diversification may serve to exacerbate rather than alleviate inter-household economic differentiation (Bryceson 1999).

1.7: Research Agendas of the Dissertation

While globally the number of people who live in absolute poverty has been declining for 25 years, in Africa it is still increasing (Collier 2007). Kates and Dasgupta (2007) recently edited the special feature on poverty and sustainability science in an academic journal to seek scientific perspectives on poverty worldwide. The seven articles were contributed by leading scholars, ranging from an orthodox economist (Collier 2007), to an unorthodox political economist (Hyden 2007), and scientists from an international agricultural research centre (Okwi et al. 2007). Six of the seven articles focused on sub-Saharan Africa. An African exceptionalism dominates the development needs of today and will require different strategies from those used elsewhere (Kates and Dasgupta 2007).

The overall assessment by Kates and Dasgupta (2007) is that geopolitics, poverty, governance and geography all contribute to African exceptionalism, although their respective importance varies by region, country and place. Yet, some authors argue that the causes of rural poverty lie not in African peculiarities but rather in geographic features that globally cause problems but that are disproportionately pronounced in Africa (Collier 2007), while others stress African socio-economic and political peculiarities in which the majority of poor are only marginally captured by market institutions and instead rely on solving their problems ‘outside the system’ (Hyden 2007). In this study I attempt to present a new insight into the uniqueness of African rural poverty and developmental challenges by examining the interactions between Africa’s inherent geographic/socio-economic conditions and the impacts of greater exposure to wider social dynamics. This study synthesises a range of recent research and intensive case studies to examine two major research agendas.

The first is to reveal two dimensions of the dominant features of rural poverty in contemporary Africa. One dimension includes low levels of the division of labour and underdevelopment of factor markets, which are attributed to Africa's inherent biophysical, demographic and historical conditions that have made investment in agricultural intensification and market development risky. The other dimension includes off-farm income diversification, de-agrarianisation and social differentiation, which are among the emerging features of African rural poverty in response to risks and opportunities provided by greater exposure to wider social dynamics in the era of globalisation. Interactions between these two dimensions have complicated the causes of underdevelopment and developmental challenges.

The second research agenda is to analyse how greater exposure to wider social dynamics affects rural development and poverty in Africa. To assess this, one must not only understand the driving factors of the livelihood diversification as an individual response to opportunities and risks provided by greater exposure to wider social dynamics in the era of globalisation, but also examine the impacts of de-agrarianisation and increasing social differentiation on rural social relations which were initially defined by Africa's inherent conditions. I assume that the trend of increasing social differentiation is a universal phenomenon across Africa as a result of heterogeneous reactions by rural sub-populations to opportunities and risks through the adoption of distinctive livelihood diversification portfolios. In turn, the impacts of de-agrarianisation and increasing social differentiation on rural institutional arrangements are diverse across regions due to local-specific historical backgrounds, policies and market/infrastructure.

The identification of driving factors of social changes in response to opportunities and risks provided by greater exposure to wider social dynamics in the era of globalisation, and the examination of factors causing the extent of diversity between and within rural economies, would contribute to refining theories of agrarian change in Africa. Yet, there have been too few intensive field studies. More concrete evidence on rural livelihoods is still much needed.

This dissertation presents intensive case studies from agropastoral communities in remote rural areas of South Africa and Kenya. South Africa and Kenya are as the major regional economic powers in the southern and eastern Africa respectively. The study areas, a Transkeian community in South Africa and a Rift Valley community in Kenya, were respectively selected to represent typical rural communities in both regions: i.e., the southern Africa, where most rural households have heavily depended on off-farm income sources for survival while farming has stagnated for years, and the eastern Africa, where diversification into stable off-farm income sources has often been associated with investment of cash/capital in agricultural intensification. The Transkeian and Rift Valley communities, while they have followed rather typical development pathways in their respective regions, have experienced divergent development paths in terms of the colonial histories, state interventions in indigenous institutions, institutionalisation of rural-urban migration, and extents of market penetration. In turn, they share some similarities. In both areas, rural households depend on various combinations of farm and off-farm activities for their livelihoods. Both study areas are located in remote peripheries with poor access to large urban markets. The environment in both is semi-arid, and the populations are traditionally agropastoralists.

As a result, these case studies reveal contrasting experiences between the southern and eastern African rural societies in the extent of the impacts of de-agrarianisation on agricultural development and rural poverty, which Ellis (2000) summarises as the contrast between ‘the stagnation of farming in the southern African periphery’ and ‘greening’ of Kenya. At the same time, they reveal similar experiences of typical rural agro-pastoral societies in both the southern and eastern Africa in terms of increasing social differentiation as a result of heterogeneous livelihood diversification strategies in reactions to risks and opportunities provided by greater exposure to wider social dynamics in the era of globalisation.

In empirical application, the analysis of the reaction to risks and opportunities provided by greater exposure to wider social dynamics needs the examination of socio-economic characteristics of households pursuing particular livelihood strategies to dealing with such risks and opportunities. Furthermore, the analysis of the impacts of these heterogeneous reactions to social dynamics on rural social relations requires the examination of the relations between groups of households pursuing distinctive livelihood strategies. To facilitate these analyses, therefore, it is necessary to identify sociological typologies of rural African populations. However, there are methodological challenges to conceptualising sociological typologies of rural African populations.

In the field of rural sociology, smallholder producers in Africa have often synonymously been treated as ‘peasants’ (Bryceson et al. 2000). African peasantries were formed through the imposition of colonial rule and the expanding world market, and were understood to stand somewhere between the ‘primitive agriculturalist’ and the ‘capitalist farmer’ (Welch Jr. 1977; Hyden 1980). However, over the past few decades, with the global tendency towards de-agrarianisation, there have been dynamic fluctuations in the ratio of rural producers involved specifically in the peasant labour process, which Bryceson defines as peasantisation/de-peasantisation (Bryceson et al. 2000). Given the extent of diversification of livelihood activities, it is difficult to draw a boundary between peasants and non-peasants in rural Africa.

As defining the term peasant becomes more problematic, the theoretical challenge is “to capture a moving target in complex transitional processes” (Bryceson et al. 2007, 30). It is therefore necessary to search for alternative criteria to effectively reflect heterogeneous reactions of rural sub-populations to risks and opportunities provided by greater exposure to wider social dynamics in the era of globalisation. One of the original aspects of this study lies in the search for new effective criteria and methodologies to develop alternative sociological typologies of rural Africans that reflect contemporary processes of social differentiation in response to de-agrarianisation in particular localities, through empirical intensive case studies.

In this study, these sociological criteria are applied to the analyses of rural livelihoods in South African and Kenyan rural communities. The South African case focuses on examining the factors affecting social differentiation due to differential access to regular off-farm incomes and livestock assets and on revealing their effects on changing social relations and on rural land use. In the Kenyan case, inter-household heterogeneity in livelihood diversification strategies are examined in relation to the adoption of sustainable agricultural intensification measures and in relation to

the access of communal resources which in turn affects governance of such resources. Based on quantitative and qualitative analytical methods, these case studies reveal how rural people have responded to risky environments and to social transitions in their local contexts.

In summary, the major objectives of this dissertation are:

- to understand environmental and institutional contexts in which rural households make a living, and to distinguish internal features due to Africa's inherent conditions from emerging features in response to risks and opportunities provided by greater exposure to wider social dynamics in the era of globalisation
- to develop and identify sociological typologies of distinctive livelihood diversification strategies within a particular local context
- to identify the driving forces of social differentiation through examining the effects of education, skills and other livelihood assets on the adoption of particular livelihood diversification strategies
- to assess the impacts of contemporary social dynamics, including increasing openness of national economies to the global economy and subsequent greater exposure of rural households to wider social dynamics, on rural social relations by examining the relations between groups of households pursuing different livelihood diversification strategies
- to synthesise findings on the uniqueness of rural African poverty and developmental challenges for theoretical implications on agrarian change and policy implications for poverty reduction

This dissertation is organised in the following way. The rest of Part I thoroughly discusses theoretical implications (Chapter 2) and methodologies (Chapter 3) of the livelihood studies. Parts II and III respectively present the South African case and the Kenyan case. Part IV discusses findings and synthesises for implications of the livelihood study.

Part I: Livelihood Diversification in Rural Africa

Chapter 2: THEORETICAL IMPLICATIONS

2.1: Dominant Features of Rural Poverty in Africa

As Karl Marx and Max Weber never seriously considered African social institutions in their analyses of pre-capitalist societies, no classical theories initially existed to guide social scientific research on rural poverty and development in Africa (Hyden 1980). One must start by identifying dominant features of rural African societies.

One of the dominant features of rural Africa is the relatively low population density (Collier 2007). In 2000, the population density in mixed rainfed farming zones in Africa was estimated at 68/km² against 139/km² in Southeast Asia and 289/km² in South Asia (Thornton et al. 2002). Another aspect of population density is land availability.

One of the conventional assumptions in the development theory was that the African continent has long been associated with agrarian modes of livelihood and that its abundance of land and relative shortage of labour, especially skilled labour, provides it with a comparative advantage in agricultural production (Boserup 1990; Bryceson 2002). Another conventional assumption was that Africa should be a low-inequality continent according to the Kuznets hypothesis because 'African countries are poor and agriculture-based, and also because the main productive asset---agricultural land---is relatively evenly distributed in most SSA (except the regions of Southern Africa) in part thanks to the tradition of communal-land holding' (Milanovic 2003; cited in Nissanke and Thorbecke 2008).

Indeed, relatively low population pressure and land availability in Africa have long defined agrarian modes of production while highly associated with communal forms of land tenure. Yet, while giving Africa a comparative advantage in agricultural production theoretically, at the same time, the low population pressure has constrained the intensification of agriculture and the development of the divisions of labour and factor markets which rather require high population density (Boserup 1990). The communal land tenure systems in rural Africa have guaranteed universal access to land among rural residents. Under such situations the division of labour is often rather along gender lines within a household that pursues highly diversified livelihood strategies than between households (Low 1986). As a result, in rural Africa, labour markets remain thin and tenancy is almost entirely absent (Ellis 2000), while there are powerful interactions with the urban labour market through migration and remittances (Collier and Lal 1984; Bryceson 1999).

Yet, in recent years there has been emerging evidence that is increasingly contradictory to the conventional assumptions. As reviewed in Chapter 1, the 1980s and the 1990s witnessed in rural

Africa the increasing divergence of rural livelihoods away from purely agrarian modes (Bryceson 2002) and the increasing income inequality (Nissanke and Thorbecke 2008). The main factors contributing to rural poverty in Africa in general still do not reflect much lack of access to land (Ellis 1998; Bryceson 2002; Eastwood et al. 2006), although a few studies report increasing landlessness and consequent income poverty in extremely overpopulated regions (Jayne et al. 2003). Rather accesses to regular off-farm incomes, livestock and educational attainment most contribute to social differentiation in contemporary Africa (Francis 2000; Barrett et al. 2001a). Especially off-farm income diversification reinforces social stratification in rural Africa as high-income earners redirect portions of their income to more lucrative activities (Bryceson et al. 2000; Bryceson 2005).

In summary, low levels of the division of labour, underdevelopment of factor markets, and high household-level livelihood diversification, are among the dominant features of rural poverty in Africa and apparently attributed to Africa's inherent biophysical, demographic and historical conditions. On the other hand, livelihood diversification into off-farm activities, de-agrarianisation, and increasing social differentiation due to differential access to off-farm incomes and non-agrarian assets are emerging features of the contemporary rural Africa. These features; i.e., inherent features and emerging features, are worth investigating in relation to existent development models.

2.2: Institutions vs. Livelihoods: Which Should be Focused?

Among the most dominant features of rural poverty in Africa, missing factor markets and high levels of livelihood diversification are closely related to communal/customary land tenure arrangements. The continent's land tenure systems in turn seem to accord with extensive agro-pastoral farming practices and to reflect agro-ecological constraints and demographic conditions in rural Africa (Welch Jr. 1977). Of course, particular forms of land tenure systems in Africa are highly diverse, especially between nomad pastoralists and sedentary agropastoralists. While diversity exists even within sedentary agropastoral communities (with which my study areas are concerned), customary land tenure systems usually consist of relatively individualised arable plots allocated to each household and commonages on which households are allowed to graze their animals (Basset and Crummey 1993).

In earlier stages of this research, I initially assumed that understanding land tenure arrangements should contribute to unveiling factors contributing to extensive agriculture and low productivity, and constraining rural development in Africa. I have surveyed various studies on Africa's land tenure institutions in relation to their analytical models and implications on rural development. These models can be roughly grouped into two contrasting schools; in this study they are tentatively labelled as the population pressure school and the social relation school.

The population pressure school assumes that low population density defines the prevalence of

communal land tenure systems and limits the scope of market development. But once population pressure rises, changing relative labour/land ratios would induce tenure evolution toward individualisation as individuals re-arrange institutional arrangements to allow more exclusive land use by individuals for agricultural intensification. In contrast, the social relation school claims that customary land tenure systems guarantee access to resources for extensive agro-pastoral activities and thus subsistence for individuals under extremely severe climatic conditions. Then individuals, whose behaviours are governed by the 'economy of affection', refrain from taking economic initiatives in investing in personal wealth. Aside from differences in methodological assumptions and derived implications, nevertheless, both schools focus on the inherent features of rural poverty in Africa, i.e., low levels of the division of labour and underdevelopment of factor markets, and attempt to search for key constraints of development in Africa's peculiar conditions, either population pressure or social relations.

Field studies, however, showed that divergent impacts of the colonial/state interventions on indigenous land tenure institutions have substantial implications on rural development in Africa. In the South African case, the colonial government extensively interfered with the indigenous land tenure institutions in an attempt to mobilise cheap migrant labour to the mining and industrial sectors, consequently reinforcing de-agrarianisation in the South African homelands (Bundy 1988; Mamdani 1996; Hendricks 1990; Sato 1997; Kitagawa 2001; Ntsebeza 2005; Iiyama 2005). Therefore, it becomes necessary to implement the in-depth historical investigations not only to describe the origin of the distorted forms of land tenure systems still observed today but also to examine how the colonial/state policies on indigenous land tenure institutions have constrained rural development through altering livelihood options available to rural populations, as discussed in Chapter 5. In contrast, the land tenure institution in my study area in Kenya, located in a semi-arid periphery, has been mostly unaffected by interventions (Iiyama 2006a), while rural populations in agriculturally high potential zones have benefited from the post-colonial land reforms and formalisation of the tenure (Francis 2000). As a consequence, on my Kenyan study area, there have been no comparative historical documents available on land administration policies.

Furthermore, emerging features of the rural poverty in Africa, i.e., off-farm income diversification, de-agrarianisation and consequent increasing social differentiation, do not feature strongly in either school. Considering these features is important in understanding the challenges of rural development in the contemporary Africa, as they may even complicate the way non-market/market institutions are organised, which was initially defined by Africa's inherent conditions and possibly distorted by colonial/state interventions. In order to assess the impact of emerging features of rural poverty on rural African development, an alternative analytical framework needs not only to examine the driving factors of emerging features of the rural poverty but also to facilitate the analysis of the interrelations between inherent and emerging features.

To do so, rather than focusing on factors determining institutional arrangements of land tenure, employing the perspectives of individuals/households who keep adapting themselves to changing circumstances may serve better to dealing with contemporary social dynamics in the analysis of

African rural poverty. It does not mean that studies on land tenure institutions will be neglected in the analysis. They will be incorporated into the analysis as they provide or constrain livelihood options available to households, i.e. on farm vs. off farm, urban vs. rural. Furthermore, they could guide the design of alternative analytical frameworks. For example, in the South African case, which attempts to reveal the effects of changing social relations on rural development, the analytical framework of the social relation school can be critically examined and modified. The population pressure school in turn gives us some insights into the effects of rising population pressures to land use changes and agricultural intensification in rural Kenya. In the following sections 2.3 and 2.4, I review the assumptions and implications of the contrasting schools more in detail. Then in Sections 2.5 and 2.6, I discuss how to modify these models to deal with both internal and external features of rural poverty in Africa.

2.3: Population Pressure and Institutional Evolution

Boserup (1965, 1990) is one of the prominent economists in the field of African development. Regarding large population as essential to enable divisions of labour, Boserup argued that Africa's habitual patterns, with thinly scattered populations over vast areas, have made it uneconomical to invest in infrastructure essential for commercial activities and market development.

Other economists have incorporated Boserup's assumption into their models of institutional changes. Their models assume that rural African institutions are flexibly adjusted to the positive stimulus of rising population density with agricultural innovation (Runge 1986; Binswanger and McIntire 1987; Barrows and Roth 1990; Place and Hazell 1993; Bourn and Wint 1994; Migot-Adholla et al. 1996; Binswanger and Deininger 1997; Kirk 1999; Platteau 2000; Otsuka and Place 2001). They assume that changes in labour-land ratios would be reflected in relative price changes and such changes would subsequently induce more intensive agricultural technology and institutional evolution toward more exclusive land rights to ensure more efficient utilisation of increasingly scarce resources. Most of their models can be identified with the New Institutional Economics, which adopts methodological individualism and regards institutions as a device to reduce transaction costs (North 1981; North 1990; Platteau 2000).

Williams et al. (1999) suggest, however, that evidence from rural Africa has not unequivocally supported the hypotheses of the population school. Factors other than population pressures have complicated directions and processes of institutional changes. For example, Tiffen et al. (1994), while adopting a Boserup-type framework, show that off-farm income opportunities, urban-rural migration, and public investment in education and infrastructure have offered rural households in the central and eastern Kenya means to cope with population pressure through agricultural intensification and investment in land. In contrast, rural-urban migration and de-agrarianisation have not promoted but rather diverged away investment in land in increasingly crowded western Kenya and Southern African peripheries (Low 1986; Bundy 1988; Francis and Hoddinott 1993;

Francis 2000). The analysis of rural poverty and social changes in Africa should identify multiple driving factors and deal with diverse directions of institutional changes than the population pressure school assume.

2.4: Social Relations and Institutional Stagnation

Anthropologists and rural sociologists often criticise economists in understanding African economic mechanisms. They emphasise personalised social relations as determining factors of agricultural development in rural Africa rather than mere resource endowments.

For example, Hyden (1980) claims that in Africa class relations (such as landowner-tenant relations of Asia or capitalist-labour relations of Europe) are absent and as a result African peasants are ‘uncaptured’ by other social classes. Hyden suggests that economic activities of uncaptured peasants are oriented to subsistence and accorded to the ‘economy of affection’, unlike the welfare-profit maximising axiom prevalent in market economies. African underdevelopment is attributed to the strength of this pre-capitalist mode of production which has let the peasants retain relative autonomy against the market forces and remain subsistence. Hyden (2007) explains why African individuals resort to the “economy of affection” as:

Africans tend to resort to the “economy of affection,” i.e., personal networks that provide instant support in a reliable fashion. They do so for good reasons: (i) transaction costs are much lower because it is easier for a poor person to approach a well endowed neighbor, relative, or friend to help provide a good or a service than associating with other poor people to try to collectively obtain it; (ii) free-riding is not a real problem because, for instance, patrons take pride in providing a common or public good even if others do not contribute, giving them the power over others they seek; and (iii) the moral hazard is low because even if the risks tend to mount with the break-up of old community boundaries, seeking out others informally for problem solutions is less risky than relying on formal institutions to do so (Hyden 2007, 16753-16754).

One finds somewhat similar arguments to Hyden’s with the emphasis on social relations among works by Japanese social historians as well as socio-economists/anthropologists (Sugimura 2007)¹. Among social historians, Otsuka (1969) suggested that in pre-capitalist societies land is neither a marketable commodity nor an alienable property, therefore analysis of such societies naturally focuses on inter-personal relations. Following Otsuka, Akabane (1971, 2001) developed his original model to analyse rural underdevelopment in Africa. Akabane regarded African tribal societies as the most primitive forms of personalised social relations based on lineages. There, combined with extremely low production levels, egalitarian redistributive norms strictly govern

¹ Recently Sugimura (2007) and other Japanese social scientists and anthropologists collaborated with Hyden to jointly hold workshops as well as to write research papers dedicated to the project “Contemporary Approach to African Moral Economy”, which was aimed at identifying and discussing contemporary development challenges in rural Africa in the historically and locally specific context of its inherent culture and value systems.

economic actions of members and keep individuals from exercising any initiatives. While Hyden highlights the relative autonomy of individual peasants in African communities, Akabane seemingly stressed detrimental effects of the tribalism and the egalitarian redistributive norms which circumvent individual autonomy/initiatives. In Akabane's reasoning, it was the very African institution that would prevent its endogenous development.

Platteau (2000), who himself is an economist, argues yet that these egalitarian redistributive norms can be adequately explained by economically rational collective actions typical of risk averse communities rather than by the tribalism. Within a poor community, relatively rich individuals might try to exit the group. This exit is expected to lead to the loss of resources available for collective security for the remaining members. Under such a situation, economic success of a particular individual is considered not as the result of his industry but just as luck or witchcraft, often provoking jealousy among other individuals. In the end, nobody would be able to exercise his initiative (Platteau and Hayami 1998; Platteau 2000).

Hyden (2007) argues that the economy of affection continues to be important in Africa as long as market penetration remains limited, while noting that there are "pockets" where farmers are innovating and increasingly integrated into the market economy, e.g., the highlands of East Africa and the vicinity of large urban markets. Against his prediction over Africans' tendency toward subsistence, however, recent social changes have driven de-agrarianisation that has in turn accentuated social differentiation among rural residents by differential access to off-farm activities and non-land assets (Bryceson 1999; Ellis 2000; Francis 2000). As Part II and Part III reveal, both in the South African and Kenyan study areas, social cleavages and communication gaps have widened between the progressive/educated and the conservative/uneducated. Rural African communities are not insulated from but increasingly exposed to wider economic changes. An alternative analytical framework is needed to be able to incorporate diversity in interests and social differentiation among rural sub-populations.

2.5: Formalist vs. Substantivist Debate in Area Studies

The contrast between the population school and the social relation school of the institution models may be similar to the formalist/substantivist debates in development studies between economists and anthropologists/rural sociologists. Formal rationality refers to the extent of quantitative calculation which is technically possible, while the substantive rationality is the degree to which the provisioning of given groups of persons with goods is shaped by economically oriented social action under some criterion of ultimate values, regardless of the nature of these ends (Weber 1956). Substantivists claim that formal economics, which has been designed to analyse economies that have a complex division of labour and markets with impersonal, atomistic, profit-oriented exchange, cannot be applied to the analysis of economies whose exchange is based on interpersonal relations. In contrast, formalists insist that non-market economic transactions can be explained by formally rational behaviors of utility-maximising

individuals in response to risky environment where such transactions persist. Bryceson notes that the debate marks “the conceptual pivot for the bifurcation of sociologically oriented peasant studies and the smallholder economic development approach” (Bryceson et al. 2000, 13-14).

In turn, both the population pressure and the social relation schools attempt to seek for the causes of rural underdevelopment in Africa’s inherent conditions, either biophysical/demographic conditions or peculiar social structures. In order to assess contemporary development challenges in rural Africa, however, an analytical framework must be able not only to incorporate emerging features of rural poverty, i.e., off-farm diversification, de-agrarianisation and social differentiation, but also to analyse their effects on rural social relations. In that sense, the moral economy (substantivist) vs. political economy (formalist) debate on Asian peasantry between Scott (1976) and Popkin (1979) may provide some implications on how to interpret the following two historical processes; the involvement of a closed village into the capitalistic world, and the consequent rural transformation in village organisations from non-market relations to market transactions.

First, as to the transitional process in which a closed village is involved in the capitalistic world, Scott, as a substantivist, who infers an evolution from simple to complex through economies based on various stages of market development, argues that the externally induced “break-down” of pre-capitalist institutions, which function to guarantee subsistence for peasants, hurts peasant welfare and induces their resistance. In contrast, formalists see transitions from pre-capitalistic to capitalistic economies as continuous processes resulting from dynamics of the peasants’ political economy. Popkin sees individual peasants rational both in market and non-market institutions, while village institutions do not always work more efficiently than markets to provide individuals with desired goods and services because of conflicts between individual and group interests and inherent tendency to increasing stratification within the peasantry. It is a rational behaviour of individuals that often drives social transitions, as individuals continuously strive to raise their subsistence level and to accumulate personal wealth through long- and short-term investments in better economic opportunities provided by either village institutions or external markets.

Which perspective, either the moral economy/substantivism or the political economy/formalism, can be more relevant in interpreting African reactions to externally brought about development challenges? As a substantivist, Hyden claims that rural Africans remain insensitive to externally brought about economic opportunities while the “economy of affection” keeps market from penetrating rural social relations. Hyden even argues that off-farm income diversification observed elsewhere recently is rather a manifestation of risk aversion, conservatism, and agricultural stagnation in rural Africa (Hyden 2007). In contrast, many economists with substantial knowledge on African livelihoods argue that livelihood diversification is a response not only to risks but also to an economic opportunity for private accumulation (Ellis 2000; Francis 2000; Bryceson et al. 2000; Barrett et al. 2001a), while increasing social differentiation may ultimately lead to reducing the scope of the “economy of affection”. An African community consists of heterogeneous individuals with often conflicting interests (de Haan 2000) that make them respond differently to constraints and opportunities provided by village institutions on one hand and by greater exposure to wider social dynamics on the other hand. It is rather natural to

interpret social changes in response to wider social dynamics, as formalists do, from perspectives of individuals who are risk averse but at the same time keen to improve private wealth.

Second, in regard to interpreting the transformation of village organisations from non-market relations to market transactions, both substantivists and formalists attempt to construct formal ideal types to reflect the natures of their subject matters: “substantivists idealise types of societies, whereas formalists idealise types of economic transactions” (Bryceson et al. 2000, 14). In Asian peasantry debate, Scott identifies non-market social type as ‘the relation between patron-client exchange and security’ and contrasts it with ‘the impersonal market exchange’. In turn Popkin reinterprets the contrast as the shift in the forms of economic transactions from ‘feudal, diffuse, multistranded ties between agrarian elites and peasants’ to ‘single stranded, precise, and contractual ties’. Popkin argues that it is possible to explain inductive research by the moral economists through a deductive framework. Then is it always possible for the research on rural transformation to reduce inductive area studies to the investigation of particular forms of economic transactions of goods and services exchanged between individuals? In the case of Asian peasantry debate, it is the availability of the rich inductive studies on the social relations that made it possible for Popkin to reinterpret them through a deductive method.

In contrast, in regard to African rural studies, there has been too little inductive research on social relation forms between households to derive implications on their economic transaction forms, while it has been considered that in Africa class relations, such as landowner-tenant relations in Asia, are absent (Hyden 1980; 2007). Instead, Hyden highlights the lack of functional interdependence between rural households in productive activities on one hand and the social mobility of the poor on the other hand, relative to those in Asia and Latin America, as distinguishing features of rural social relations in African underdevelopment.

There is no functional interdependence bringing them (individual households) into reciprocal relations with each other and leading to the development of the means of production. ... To the extent that there is co-operation among producers in these economies it is not structurally enforced but purely a super-structural articulation rooted in the belief that everybody has a right to subsistence. Consequently, co-operation among peasants is temporary, for example, at the time of an emergency, rather than regular and formalized (Hyden 1980,13). Much of the productive efforts are still carried out by individual households quite independently of the work in other such production units. It is as if everybody is paddling his own canoe rather than accepting the implications of working on a larger sailing vessel, where roles are assigned according to functional needs (Hyden 1980, 205).

This lack of agricultural transformation in Africa may limit economic development at the macro level, but it leaves room for social mobility that is not found in Asia and Latin America, where society is more heavily stratified... the difference between (the poor in Africa) and the poor in Asian and Latin American countries is that they have more alternative social mechanisms to fall back upon. Coping through sharing is still widely practiced in Africa (Hyden 2007, 16754).

Hyden argues that the lack of functional interdependence between rural households in productive

activities has made forward and backward linkages difficult to develop in rural settings, while the economy of affection has kept individuals insulated from market forces. Hyden therefore insists that it is essential to acknowledge these peculiar aspects of rural social relations in order to understand why market cannot be a driving force for agricultural transformation in Africa as economists suggest (Hyden 2007). However the economy of affection may be not as firm as Hyden insists, considering that many individuals have responded to economic opportunities.

On the other hand, little is known on the effects of greater exposure to wider social dynamics on the functional interdependence between rural households in productive activities and the status of the poor in Africa. De-agrarianisation and increasing social differentiation lead to individualising social relations and dismantling the economy of affection, but, due to high household-level livelihood diversification, may not necessarily lead to deepening the divisions of labour. If so, greater exposure to wider social dynamics promotes the involvement of rural villages into cash economies but simply increases their vulnerability to exogenous shocks, while failing to integrate driving forces of rural development and agricultural transformation through forward/backward linkages. These effects may be diverse across regions and requires inductive analysis.

In summary, the analysis of the peculiarities of African rural poverty in the era of increasing openness to the global economy requires an analytical framework that allows the identification of driving factors of off-farm diversification, de-agrarianisation and social differentiation, as well as the examination of their effects on social relations, by overcoming the methodological formalist/substantivist dichotomy. On the analysis of the response by rural households to risks and opportunities provided by greater exposure to wider social dynamics, the transitional process in which a closed village is involved in wider economy is analysed from the perspective of individual households who respond to such risks/economic opportunities provided externally vis-à-vis by rural institutions, as formalists do. It is assumed that African communities consist of heterogeneous sub-populations who pursue divergent livelihood diversification portfolios whose process reinforces social differentiation. In turn, on the analysis of the impacts of such greater exposure to wider social dynamics, the effects of de-agrarianisation and social differentiation on social relations, which can be diverse across regions due to local-specific historical backgrounds, policies and market/infrastructure, need to be assessed with regard to their substantive effects on the functional interdependence between households in productive activities and the status of the poor through inductive research.

2.6: Search for New Sociological Typologies

The fact that African rural communities have experienced social differentiation suggests that these communities consist of heterogeneous sub-populations with often conflicting interests and objectives (de Haan 2000), which make them respond differently to social changes externally brought about. In empirical application, the analysis of the reaction to greater exposure to wider social dynamics needs the examination of capital asset endowments and socio-economic

characteristics of households, i.e. education, skills, labour, and other livelihood assets, which determine their ability to adopt distinctive livelihood strategies to deal with risks and opportunities externally provided. In turn, the analysis of these impacts on rural social relations requires the examination of the functional interdependence between rural households in productive activities.

To facilitate these analyses, it is necessary to identify sociological typologies of rural African populations that reflect these heterogeneous sub-populations with distinctive livelihood strategies. At the same time, these need to be simple so that their empirical application in the analysis of rural poverty and in the identification of target groups is cost effective. There are yet methodological challenges to conceptualise sociological typologies of rural African populations.

In the field of rural sociology, smallholder producers in Africa have often synonymously been treated as 'peasants' (Bryceson et al. 2000). African peasantries were being formed through the imposition of colonial rule and the expanding world market. The peasant is understood to stand somewhere between the 'primitive agriculturalist' and the 'capitalist farmer' (Welch Jr.1977; Hyden 1980). In a more formal definition, the peasant is characterised by a range of attributes, including (a) the pursuit of an agricultural livelihood which combines subsistence production with commodity production; (b) internal social organisation based on family labour whereby the family serves as the unit of production, consumption, reproduction, socialisation, welfare and risk-spreading; (c) external subordination to state authorities and to regional or international markets; and (d) village settlement and traditional conformist attitudes and outlook (Bryceson et al. 2000, 2-3). Hyden (1980; 2007) indicates that social differentiation in Africa seems less institutionalised than in other parts of the world, noting that Africa is the only continent where the peasants have not yet been captured by other social classes.

However, over the past few decades with a global tendency towards de-agrarianisation, there have been increasing livelihood diversification and social differentiation elsewhere, and dynamic fluctuations in the ratio of rural producers involved specifically in the peasant labour process, which Bryceson defines as peasantisation/de-peasantisation (Bryceson et al. 2000). Given the extent of diversification of livelihood activities, it is difficult to draw a boundary between peasants and non-peasants in rural Africa. Attempts are made to divide rural households into 'rich', 'middle' and 'poor' peasant categories in terms of access to land and other agrarian assets, but the dividing line between them is necessarily arbitrary (Raikes 2000).

As peasants become definitionally problematic, it is therefore necessary to search for alternative criteria to effectively reflect heterogeneous reactions of rural sub-populations to risks and opportunities provided by greater exposure to wider social dynamism in the era of increasing openness to the global economy, especially diversification into either remunerative or low-return off-farm activities.

The 'livelihood approach' has been developed and improved by livelihood specialists to effectively identify and describe heterogeneous livelihood diversification strategies among rural sub-populations within a particular local context. This approach can be effectively modified and

employed to empirically assess the effects of de-agrarianisation on local processes of social differentiation on rural social relations and institutions. The next chapter describes the livelihood approach, including its key concepts and their definitions, analytical units, hypothesis on diversification and criteria to develop heterogeneous livelihood typologies among sub-populations. It also explains how these methodologies are applied to the South African and Kenyan case studies.

Part I: Livelihood Diversification in Rural Africa**Chapter 3: METHODOLOGY****3.1: Livelihood Approach, Key Concepts and Definitions**

This chapter contains a review of the literature on the methodologies used in the livelihood approach (e.g. Ashley and Carney 1999; Ashley 2000; Ellis 2000; de Haan 2000; Barrett et al. 2001a; Ellis and Freeman 2005) and explains how they are applied to the South African and Kenyan studies. The livelihood approach is not a theoretical discipline but an analytical framework to facilitate precise understanding of heterogeneous livelihood strategies pursued by rural populations in low-income countries. As Ellis (2000) notes, livelihoods and diversification have always, of course, been in rural Africa, while the ‘livelihood approach’ is rather recently recognised as a ‘new’ approach to rural poverty reduction. This section begins by elaborating key concepts and definitions, especially based on Ellis (2000) and Barrett et al. (2001a).

The most important concept of the livelihood approach is, of course, a livelihood. In its framework, the livelihood is defined as the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household. Five main categories of capital as contributing to assets in the livelihood definition are presented in Box 3.1.

Box 3.1: Categories of Capital Assets in Livelihood Approach

- (1) Natural capital: the natural resource base
- (2) Physical capital: assets brought into existence by economic production processes, e.g. infrastructure, tools, and machines
- (3) Human capital: education level and health status of individuals and populations
- (4) Financial capital: stocks of cash (savings) that can be accessed to purchase either production or consumption goods, and access to credit
- (5) Social capital: social networks and associations in which people participate and from which they can derive support that contributes to their livelihoods.

Among these assets, the concept of social capital is too vaguely defined and often regarded too controversial even by some leading livelihood specialists, such as Ellis (2000) and Bryceson et al. (2000) to employ it extensively in the livelihood analyses. There seems to be a general consensus that social capital refers to the realm of informal institutions, but there is little agreement on its definition, its coverage of personalised networks compared to more formal community organisation, and its efficacy as a vehicle for describing political, social or economic change. For example, the World Bank interprets social capital as the associational ties built on horizontal cultural norms of identity, trust and reciprocity, but this definition does count neither the

emotional ties of family nor vertical authoritarian or patronage networks of trust or reciprocity, what Hyden (1980, 2000) calls the ‘economy of affection’. In turn, it is extremely difficult for researchers to identify social capital, as a great deal of reciprocity is hidden, or is discovered only by time-consuming anthropological research, or emerges into the open only at times of serious livelihood crisis. Thus the concept of social capital must be treated with caution in empirical application (Ellis 2000; Bryceson et al. 2000).

In empirical analysis, preferably, the three concepts of the livelihood, i.e., assets and activities, and income, should be used simultaneously. Yet, income is often used as a proxy to measure livelihood at initial stages of analyses. While livelihood and income are not synonymous, the composition and level of individual or household income are nevertheless the most direct and measurable outcome of the livelihood process (assets/activities) (Ellis 2000). Income, assets and activities are in fact complementary concepts. Assets offer a store of wealth as well as sources of income, while activities are *ex ante* flows of services that map the stock concept of assets into the *ex post* flows of income. Representing livelihood by either assets or activities, however, can miss some aspects of livelihoods. For, as stated, among assets, social capital assets (social networks and associations) are often difficult to be identified by outsiders and to measure quantitatively. Activities can also be difficult to value, and may miss the income generated from non-productive assets (Barrett et al. 2001a).

3.2: Relations between Livelihood Strategies and Assets

The livelihoods approach requires timely and cost-effective means of capturing the livelihood strategies of the poor. In implementing the survey and the analysis of livelihood approach, major livelihood (income earning) activities in a particular research site are first identified. Major income earning activities are generally classified into farm/non-farm and/or (on-)farm/off-farm income sources, whose definitions are shown in Box 3.2.

Box 3.2: Definitions of Farm/Non-farm, On-/Off-farm Incomes

Farm income. All activities in the agriculture sector, regardless of location or function. Some authors, such as Reardon (1997), include farm wage employment into farm incomes.

Non-farm income. All activities outside the agricultural sector, regardless of location or function, including non-farm wage or self-employment business income, remittances.

(On-)farm income. All activities on one’s own property, regardless of sectoral or functional classification; almost always self-employment.

Off-farm income. All activities away from one’s own property, regardless of sectoral or functional classification; can be wage or ‘off-farm’ self-employment and include income obtained from local environmental resources such as firewood, charcoal, house building materials, wild plants.

(Reardon 1997; Ellis 2000; Barrett et al. 2001a)

The basic distinctions among activities and incomes are to be made by sector (farm vs. non-farm) and by space (farm vs. off-farm), yet they are often confusing as non-farm/off-farm are routinely used interchangeably and often synonymously, while they can be overlapped by function (wage vs. self employment). For example, activities such as formal employment (teacher, officials), business and migrant labour are both non-farm and off-farm activities. Charcoal making is also non-farm because it involves the processing of forest products as well as off-farm because it is obtained from off-farm local environmental resources. However, temporary agricultural wage employment is 'off-farm' but 'farm' income. The use of (on-)farm/off-farm distinction can be less confusing in dealing with function, as (on-)farm mostly refers to the self-employment, while both farm/non-farm incomes include wage employment. In order to avoid definitional complications in functional lines, I concentrate on the use of (on-)farm/off-farm dichotomy. Farm and off-farm categories are further disaggregated into different sub-categories of activities, as reflecting different features of the resources required to generate them, accessibility to them depending on assets and skills, and their location nearby or remote.

The livelihood approach usually takes a household, consisting of co-residents plus migrant members, as a basic analytical unit, while its relevancy is often debated by those who claim a household has been disintegrated in the process of rural-urban migration and no longer function as a decision-making unit (Bryceson 1999; Bank 2003; de Haan and Zoomers 2005) as will be discussed in detail in the South African case. The capability of households and their individual members to survive and their adaptability to external changes should be reflected in the ability to adopt particular livelihood strategies. Their ability to adopt particular livelihoods in turn may depend on their asset endowments. For example, lack of education or low human capital excludes the individual from activities that require a particular level of educational or skill attainment for participation in them. Therefore, once distinctive livelihood diversification patterns are identified, their association with the capital asset endowments of a household are examined. To guide research, I assume associations between particular livelihood strategies and assets, following Ellis (2000), Francis (2000), de Haan (2000) and Barrett et al. (2001a).

At village or community level, different households will adopt different livelihood strategies according to their particular asset and access status. Furthermore, within the household, the strategies of individuals are likely to be constrained by, and to overlap with, the livelihood strategy of the household or homestead group. For example, households with more assets (especially educated members) are likely to adopt strategies including regular off-farm income activities and are often engaged in farm activities as they can afford to purchase inputs. They can also afford to invest in higher education of family members as part of their diversification strategy. However, households without assets tend to be engaged in low-return off-farm activities while failing to invest in productive farm activities and in the education of family members.

One should note that there is a caution in regard to the relation between livelihood strategies and social capital among five types of the livelihood assets. Donor agencies such as the World Bank often assume that horizontal associational ties of trust within the community, i.e. 'civil society', provide the basic trust upon which the transaction costs of everyday economic exchange can be minimised and thus argue that investment in social capital within the rural community would

pave the way for improving resource access by individuals and for enabling a sustainable environment for their community. On the other hand, Ellis (2000) and Bryceson et al. (2000) claim that social capital's horizontal associational ties cannot be assumed to exist or to be necessarily desirable, as the processes that create 'insiders' and 'outsiders' with respect to social capital sometimes result in the 'social exclusion' of particular individuals or groups within rural communities (Ellis 2000, Bryceson et al. 2000). Furthermore, livelihood diversification, de-agrarianisation, increasing social differentiation in response to risks and opportunities provided by greater exposure to wider social dynamics in the era of increasing openness to the global economy should affect the way rural social relations are organised.

The 'community' refers to localities with dense concentrations of interpersonal relations and commonly held behavioral norms based on a shared identity, associational ties and mutual support. ...Internal organizational features of peasant society have tended to be based on hierarchical relations embedded in differences in age, gender, and genealogical descent.....While many of these vertical organizational features are eroding (in the process of globalization), they have been doing so at varying rates within different peasantries... Quite apart from the effects of enhanced mobility, the intensified interaction of peasant households and communities vis-à-vis wider state and market processes can engender such conflictual norms that could serve to undermine rather than promote social trust within the community (Bryceson et al. 2000, 316-320).

My view also accords with the above statement as stated in Chapter 2.5 that de-agrarianisation and increasing social differentiation may lead to individualising social relations but not necessarily to fostering local market development, while these effects may be diverse across regions. Therefore, in empirically analysing the reaction to greater exposure to wider social dynamics and increasing openness to the global economy, I examine the relations between particular livelihood strategies and capital asset endowments of households, i.e. education, skills, labour, and other livelihood assets, except social capital assets, by assuming that these determine ability of households to deal with risks and opportunities provided externally vis-à-vis rural institutions, while the effects of social capital is undetermined. In turn, the effects of greater exposure to social dynamics and increasing openness to the global economy on social capital are examined in regard to the impacts of de-agrarianisation and social differentiation as a result of livelihood diversification on social relations between rural households and their functional interdependence in productive activities.

3.3: Criteria of Differentiating Heterogeneous Livelihood

Diversification Strategies

When heterogeneous livelihood strategies are observed among rural sub-populations, it is useful to distinguish beneficial types of diversity from detrimental types, and to classify each household

according to a typology of livelihood strategies (Ellis 2000; Homewood 2005).

Then which criteria can be used to categorise households based on the similarity in the livelihood diversification strategies? As already mentioned, income diversity is often used as a proxy to livelihood diversification. Farm and off-farm income activities are disaggregated into sub-categories to reflect different features of economic returns, the resources required to generate them, accessibility to them depending on assets and skills, and their location nearby or remote. These sub-categories can be location-specific and should be chosen to reflect social differentiation in a particular local context (Reardon 1997; Ellis 2000; Barrett et al. 2001a). In addition, as income comprises not only cash components but in-kind contributions (i.e. consumption of own-farm produce) to the welfare of the household (Ellis 2000), whether a narrow (only cash components) or a broader (including in-kind contribution) definition of income will be applied also depends on a particular local context.

Ultimately, the analysis of diverse livelihood strategies should reveal local processes of social differentiation, by allowing examination of differential responses by rural sub-populations to opportunities/risks provided by de-agrarianisation processes under location-specific institutional/environmental constraints. In the next sections, I explain specific research questions in the South African and Kenyan contexts and briefly describe how the livelihood approach is applied to these case studies.

3.4: Application to South African Case

The colonial context is vital to understanding the historical process of de-agrarianisation in rural South Africa. Colonialism divided South Africa's landscape between white-claimed territories that made up over 80% of the land, and the rest of the country, which was designated as reserves (homelands) for African occupation. Initial efforts by African producers during the late 19th century to compete with their white counterparts were stifled by the colonial demand for labour spurred by the mining boom and subsequent industrialisation. Within the homelands, each household was given restricted access to land whose area was too small for commercial farming. With few economic opportunities in the homelands, the residents of the homelands were destined to be migrant workers. By the mid-20th century, the homelands became net importers of staple crops from white South Africa (Low 1986; Bundy 1988; McAllister 1992; McAllister 2000; Ntsebeza and Hall 2007). However, urban economies started to contract after the late 1970s and many retrenched workers went back to the homelands. Nevertheless, the stagnation of the homeland agriculture was never reversed (Andrew et al. 2003; Bank 2005).

In 1994, the post-apartheid government inherited the highly skewed land distribution among the races, structural unemployment, and stagnation of the former homeland economies. The land and agrarian reform, which was the biggest political goal of the anti-apartheid struggles to empower the rural poor, however, has been marginalised as a political agenda in the post-apartheid period,

behind macro-economic programmes to tackle massive unemployment (Ntsebeza and Hall 2007). This is because the late 20th century social transitions, i.e. urban unemployment and dismantling of the apartheid, have changed the nature of rural families, from functional family farms to the displaced urban unemployed. Bank (2005) claims that rural development efforts would be nullified as welfare-dependent, often female-headed households neither farm effectively nor receive regular remittances from absent industrial workers.

The main objective of Part II is to reveal the effects of changing social relations in response to de-agrarianisation on South African rural development. The current stereotype view of rural households, i.e. the displaced urban unemployed, however, masks more complicated and dynamic local processes of social differentiation in the South African context. Based on case studies from the former homeland communities, I argue that rural sub-populations have been more heterogeneous in their reactions to de-agrarianisation and continuously straddling with urban-rural linkages than usually perceived. In the South African case, I extensively use qualitative methodologies to describe long-term local processes of social differentiation.

In the analyses, first, I elaborate the historical investigation of the land tenure administration during the late 19th to 20th century in the study area. This reveals the inherent heterogeneity in ideology among the rural sub-populations, which the colonial land administrations tried to suppress to prevent a few progressive farmers from accumulating wealth within the homelands (Bundy 1988; Ntsebeza 2005). Next, I describe heterogeneous reactions to social transitions by rural sub-populations over the past decades, i.e. experiences of migration, their attitudes toward investment in education or in farming. In effectively doing so, I develop a typology of distinctive livelihood strategies, using the household survey data on the proportional contributions of sub-categories of off-farm income activities (pension, wage/business, remittance, casual income) as well as in-kind contributions of land-based activities (maize production, livestock) to livelihoods as criteria. While engagement in regular off-farm income activities is a key criterion to distinguish the better-off from the poor in rural South Africa (Leibbrandt et al. 2000; Francis 2000; Eastwood et al. 2006), the deliberate consideration of land-based activities, especially livestock ownership, to the wealth is necessary to differentiate households who have managed to accumulate wealth over time from those who have not.

3.5: Application to Kenyan Case

The Kenyan economy has been principally based on agriculture without a strong industrial sector, and the extent/process of de-agrarianisation has been more modest and gradual than that of South Africa whose economy is more industrialised with a highly developed state mechanism and urban capitalist sectors. Nevertheless, off-farm income diversification has become a significant feature of livelihoods in rural Kenya. The rapid population growth since independence has threatened the shrinking agricultural resource basis on which Kenyan economy primarily depends. The primary concern is therefore whether diversification into off-farm activities could contribute to sustainable

agricultural intensification by providing rural households with capital and by allowing them to mitigate risks that would otherwise arise from specialisation in farming. Reportedly, diversification into off-farm activities has been accompanied by sustainable agricultural intensification in already highly populated areas with high agricultural potential and with better market access, such as in central and parts of eastern Kenya as well as the former white highlands (Hyden 1980; Collier and Lal 1984; Evans and Ngau 1991; Tiffen et al. 1994; Zaal and Oostendorp 2002).

In contrast, the development did not reach the rural peripheries in the semi-arid/arid zones until the mid-20th century or later (Hyden 1980). With low population density, people in these zones survived on slash-and-burn agriculture combined with extensive grazing of indigenous animals. In the recent few decades the arrival of infrastructural development and education has gradually transformed rural livelihoods away from an autarchy (Iiyama 2006a). Concurrently, more people have migrated from high potential zones (that are already over-populated) into marginal zones in search of unoccupied land. Initially, both the original population and the immigrants resorted to opening up indigenous forests to expand arable and grazing activities, as few alternative cash earning opportunities were locally available (Francis and Hoddinott 1993; Freeman and Ellis 2005). These exploitative practices led to the depletion of vegetation and the degradation of inherently fragile soils. Rising population pressure coupled with increasing demand for cash incomes to cater for westernised consumption patterns have made it necessary for rural dwellers to intensify and commercialise their farming practices to achieve both welfare and environmental goals.

Along with the infrastructural development, development agencies (either government or non-governmental) have arrived in such peripheries to alleviate poverty and reverse environmental degradation by providing residents with new farming technologies. Reports indicate that, even within a small area, rural households respond heterogeneously to adopting new technologies, depending on their livelihood diversification into off-farm income activities (Tittone et al. 2005; Iiyama et al. 2008). Households that diversify into regular off-farm income activities are more likely to adopt intensive farming and resource management, while a substantial number of the poor without access to regular off-farm incomes survive either on conventional extensive farming methods or on exploitation of forests to make charcoal for sale. The differential dependence on natural resources among sub-populations should raise serious governance concerns (Iiyama et al. 2008).

The application of the livelihood approach to rural Kenya therefore should be able to reveal the effects of local processes of social differentiation on governance and sustainable agricultural intensification by examining the association between the particular livelihood diversification strategies and the adoption of resource management. Part III provides detailed case studies from a Rift Valley community in western Kenya. In the study area, while there is little variety in off-farm income activities (regular, casual or remittances), most households adopt diverse crop (staple, fruits, drought-resistant, commercial) and livestock (cattle or small ruminants, indigenous or exotic) varieties, each with different economic returns and resource management incentives. Proportional contributions of diverse crop and livestock activities along with off-farm income

sub-categories are effective criteria to categorise heterogeneous households into relatively homogenous groups with similar livelihood diversification strategies and resource management levels. As the analyses involve a range of the quantitative data with multiple variables to reflect diversity in crop-livestock varieties, multivariate analytical tools are used where necessary.

Part II

South African Case

Part II: South African Case

Chapter 4: SOUTH AFRICAN BACKGROUND

4.1: Political Economy of South Africa's Rural Development

South Africa is the biggest economic power in Africa with its highly developed state mechanism and capitalist system, which were formed during the colonial period. Though the country consists of multi-racial, multi-ethnic groups, with the largest concentration of European settlers on the continent, the indigenous populations went through the most drastic form of colonisation and marginalisation in Africa under a regime of racial segregation which lasted until 1994.

Rural underdevelopment in South African peripheries has been the subject of academic research. During the period of apartheid, it was common for academics to analyse rural underdevelopment in relation to South African capitalism, by elucidating the roles of white farmers, mining and industrial capitals in the proletarianisation process of indigenous Africans (Wolpe 1972; Lipton 1989; Bernstein 1996; Drew 1996; Levin and Weiner 1996; Levin and Weiner 1997; Bernstein 1998). They often use the contrasting concepts to emphasise the dualistic nature of the South African political economy, such as capital vs. labour, urban vs. rural, modern vs. traditional, market vs. customary, commercial vs. subsistence, industry vs. agriculture. The political economy literature focuses on the conflicts and compromises of interests among Europeans (mining, industrial, merchant or agricultural sectors) over the establishment of the migrant labour system. However, the indigenous rural populations tend to be rather homogeneously treated as a displaced urban proletariat within the wider capitalist economy.

As a result, while never passive to marginalising forces, survival strategies by ordinary Africans during the colonial and apartheid periods were rarely documented except by a few anthropologists, rural sociologists and historians (Hunter 1979; Mayer 1961; Mayer 1980; Beinart and Bundy 1987; Bundy 1988). It is only recently that the livelihood approach was used in an attempt to reveal heterogeneous logics of and reactions by rural sub-populations to the social transition (Murray 1995; Francis 2000; Murray 2000; Bank and Minkley 2005). This is because the post-apartheid reform needs livelihood perspectives, i.e. how and why rural populations survive with a range of assets and farm/off-farm activities, to devise effective policies to improve the welfare of those historically marginalised (Ntsebeza and Hall 2007). Some authors attempt to re-evaluate the 'hidden' role of subsistence farming in rural livelihoods (Cousins 1996; Andrew et al. 2003; Eastwood et al. 2006).

Long-term observers of social changes in rural communities, such as anthropologists, report that there are an increasing number of rural households who fail to cultivate arable lands. They attribute this phenomenon of 'under-farming' to increasing economic differentiation and social disintegration (Beinart 1992; McAllister 1992; McAllister 2001). If so, what did social relations

originally look like, and how have they changed over time? Bank (2005) claims that the conventional livelihood approach, which looks at inter-household heterogeneity in livelihood strategies without questioning internal dynamics in community/familial social relations, misses 'the increasing fragility of rural households and their inability to hold themselves together under conditions of stress and strain associated with social transition'.

Historical discontinuity in the livelihood study in rural South Africa may make it difficult to evaluate the long-term effects of de-agrarianisation on local processes of social differentiation through the conventional application of the livelihood approach. The main objective of Part II is to examine the effects of changing community/familial social relations on under-farming by complementing this historical discontinuity in the livelihood study. I attempt not only to examine the heterogeneity in livelihood diversification strategies currently observed, but also to reveal changing inter-/intra-household social relations through historical investigation (Chapter 5) and life-history survey (Chapter 6).

Then, understanding the impacts of the South African political economy on de-agrarianisation is pre-conditional to investigating the local process of social differentiation through the livelihood study. In the rest of this chapter, I provide the historical background on the rise and fall of the migrant labour system in South African peripheries. The history covered is demarcated into the following overlapping periods: (1) mining boom and making of the homelands [the late 19th century to the 1970s] (Section 4.2); (2) migrant labour system and apartheid in crisis [the 1970s to 1994] (Section 4.3); and (3) unemployment and social differentiation [after the 1980s] (Section 4.4).

4.2: Mining Boom and Making of Homelands

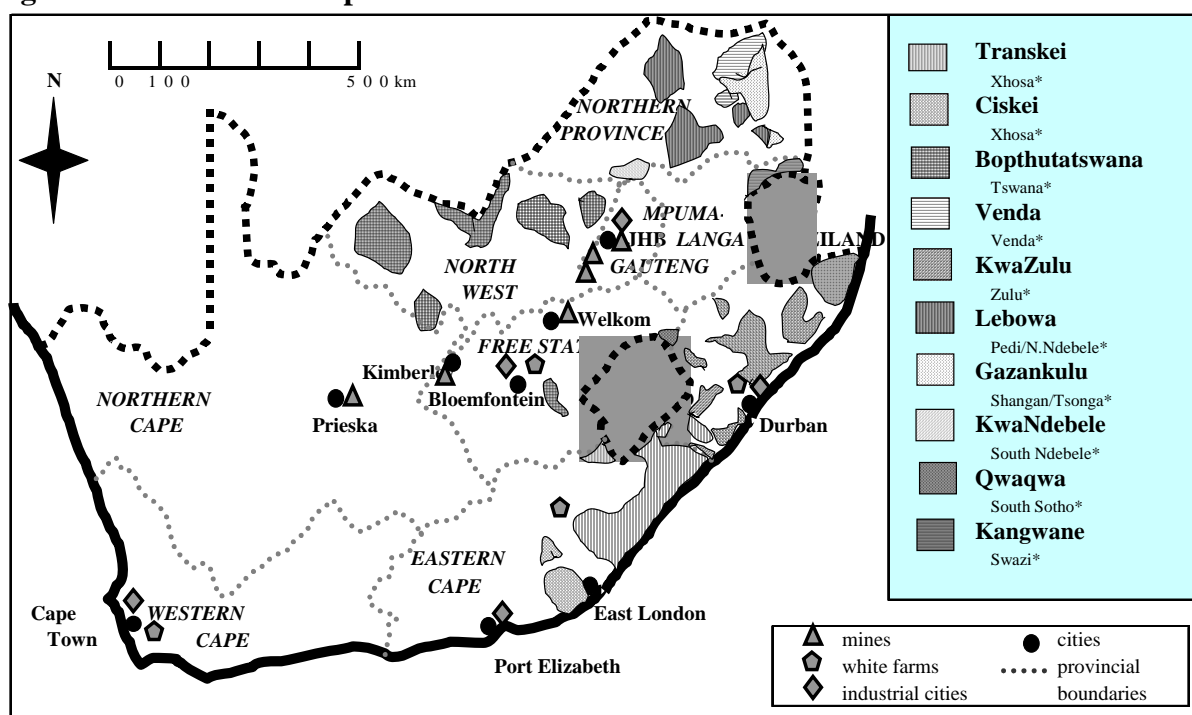
The Dutch settlers arrived in the Cape in 1652, but it was after the 19th century when the British took over the Cape Colony in 1806 that indigenous Africans started frequently encountering European settlers. The inland intrusion into and conquest of land by the white settlers created upheavals among African societies and eroded the internal cohesions of the tribal social systems, while exposing Africans to western education, technology and capitalist ideology through contacts with missionaries and merchants. Among African societies, there emerged a few individuals keen to adopt western civilisation. Some became progressive farmers who produced surplus by introducing new farming implements and gaining farms from colonial officials. The rise in demand for food crops subsequent to the 1867 diamond discovery in Kimberly gave African farmers a boost. In the Cape colony, some politicians and merchants even attempted to encourage African individuals to expand into commercial farming (Bundy 1988).

The discovery of gold in Transvaal in 1886 reversed the favourable environment for African farmers. The emerging mining capitalists gained political power over merchants in the Colony and started to implement a series of policies to mobilise cheap African labour. The white

government used land administration as a tool to control labour. The Natives Land Act of 1913 and the Native Trust Land Act of 1936 banned Africans from acquiring land outside of their designated reserves, merely accounting for 13% of the national land (Carstens 1981; Iiyama 2005). The government attempted to avoid creating the entirely landless class, being afraid of the influx of impoverished landless Africans into urban areas. To do so, they indirectly controlled land allocation to African families within the Reserves through appointed authorities (Lipton 1989; Beinart 1994; Bundy 1988; Hendricks 1990; Mamdani 1996).

The capitalists also attempted to institutionalise labour recruiting systems. The mining capitalists were afraid that high competition for labour would raise wage levels, and thus established the Chamber of Mines in 1889 to coordinate economic interests of the mines to recruit rural Africans collectively to suppress wage levels. Recruiting agencies (later known as The Employment Bureau of Africa, TEBA) were built across rural towns (Lipton 1989; Beinart et al. 1986; Beinart 1994; Duncan 2001). The commercial farming sector also sought for a stable supply of African labour by establishing Labour Bureaux in rural areas (Lipton 1989; Beinart 1994).

Figure 4.1: Homelands Map



(note) based on Union of South Africa[1955] and Christopher[1994:75]Figure 3.7. Homeland Consolidation Plans, 1973.

*for the language groups, see Horrell[1973:4], Butler, Rotberg and Adams[1977:3].

In 1948, the government began to give effect to 'apartheid' policies. According to these policies the white racial group formed a single nation, while Africans belonged to several distinct potential nations, so that the white nation became the largest in the country (Butler et al. 1977; Thompson 1995). In 1959 the reserves were grouped into eight (eventually ten) territories (Figure 4.1). Each such territory became a 'homeland' for a potential African 'nation', which was to 'develop along its own lines' administered by a set of Tribal Authorities, consisting of chiefs and appointed

officials, while all the rights were denied it in the rest of the country. In 1971 the South African government was empowered to grant independence to any Homeland. The Transkei was the first territory where the government tried out its projects (Butler et al. 1977; Maylam 1986; Thompson 1995).

4.3: Migrant Labour System and Apartheid in Crisis

Gold and diamonds provided the wealth that transformed South Africa from a largely subsistence economy into the most industrialised, modern state in Africa. Until the 1970s South Africa underwent a period of rapid industrialisation. The mines had a profound effect on guiding labour policies because of their dominant role in the economy (Wilson 1972). They opted to suppress the cost of unskilled African workers, due to the extreme sensitivity of the industry to costs under the international monetary regime (Lipton 1989). As a result of discriminative and exploitative labour policies against Africans, while the South African economy burgeoned, the benefits were not equally distributed. While the white community enjoyed the highest standard of living, often comparable to that of the 'first world' western nations, the African majority in the homelands were disadvantaged in almost every measurable standard, including income, education, housing and life expectancy. As conditions in the homelands continued to deteriorate, the economic incentives for Africans to leave there, either as immigrants or permanently, grew more powerful than ever (Thompson 1995).

This pattern of economic development based on the exploitative migrant labour system was gradually seen as inefficient, leading to high labour turnover and low productivity, as the process of industrialisation demanded more skilled workers based on the stabilised labour market. Poverty further limited the growth of internal markets (Thompson 1995). However, the fundamental reform of the apartheid state did not materialise during the 1970s, as the tentative gold boom in the midst of the international political economy temporarily eased the foreign reserve constraints. The boom did not, however, last long. The sharp rise in African wages substantially raised the cost of unskilled labour (Lipton 1989; Beinart 1994). During the 1980s gold production started to fall; this led the government to take tight fiscal and monetary policies. The government cut subsidies to industries and white farming sectors, while raising discount rates. Mines, factories and white farms became heavily indebted and bankrupt. Under the serious recession, there was a massive retrenchment of unskilled African workers. Distressed workers initiated strikes in towns and in rural areas (Beinart 1994; Murray 1995; Schirmer 2000).

By the mid-1980s, South African society was thrown into a state of emergency. Apartheid became increasingly controversial, leading to widespread sanctions and divestment abroad and growing domestic unrest and oppression, most notably by the African National Congress (ANC). Under pressure, the National Party government took the steps towards negotiating with the ANC and other political organisations and released the most prominent opposition leader, Nelson Mandela, from prison after 27 years. Apartheid legislation was gradually abolished (Beinart 1994;

Murray 1995; Schirmer 2000). The regime based on the inefficient migrant labour systems finally came to end when the ANC won by an overwhelming majority in the first ever multi-racial election in 1994. The homelands were abolished and integrated into the new provinces of democratic South Africa.

4.4: Unemployment and Social Differentiation

The homeland economies had been primarily based on remnant smallholder agriculture and money from migrant workers. But after the 1980s, the pattern of migration dramatically changed due to the recession in the sectors which had traditionally employed the majority of unskilled rural African workers. Mine work became a career for a smaller professional elite minority as opposed to a series of intermittent contracts for a mass of unskilled labour. Over the 10 years between 1982 and 1992, the number of migrant workers employed in gold mines dropped by 22%, and those employed in coal mines dropped by 54%. Minor TEBA offices were merged for restructuring into a few representative regional office. Even in the commercial agricultural sector, millions of farm workers and their families were displaced from white farms from the mid-1980s to the early 1990s. The Labour Bureau, which had 800 rural established offices by the 1970s, became redundant during the 1980s (Lipton 1989; Beinart 1994; Murray 1995).

In 1980 over 50% of the African population lived within the homelands (Beinart 1994). While many retrenched workers returned home in economic distress, there emerged a few African elites who accumulated wealth within the homelands. The South African government funnelled large quantities of money into the homelands which emphasised the emerging social differentiation. Expanding bureaucracies and educational institutions boosted the number of homeland citizens earning reasonable salaries. In the Transkei alone, there were 20,000 people in state employ in 1980 and 14,000 teachers taught nearly 70,000 pupils. All but a few hundred top posts and advisory positions were Africanised (Beinart 1994). Thus, by the 1980s, rural African societies in the homelands became differentiated in terms of access to regular employment and wages, intensifying local-level social tensions.

Since 1994, the pace of economic growth was lagging behind the increase in the number of new entrants into the labour market. According to Burger and Woolard (2005), the unemployment rate rose from 30% to 41%. Unemployment among the youth is particularly high, and the unemployment rate of the youth born between 1976 and 1986 rose from 50% to 70% between 1995 and 2002 (Burger and Woolard 2005). The proportion of households with unemployed members has more than doubled from 13.4% in 1995 to 27% in 2002, and amongst these, the proportion of households in which no one is employed increased from 4.7% in 1995 to 11.6% in 2002 (Pirouz 2004). However, the old-age pension system, which had been originally introduced in 1928 for the white population and broadened to include all South Africans in 1994 although not equally, became suddenly equalised and increased for Africans. Women aged over 60 and men aged over 65 are eligible to receive a pension, and thus this state welfare system provides a

kind of vital social security in the former homelands (Legido-Quigley 2003; Bank 2005).

Francis (2000) suggests that the most significant inter-household inequality in the former homeland areas concerns access to a regular income, such as wages, remittances or pensions. She indicates that the households could be grouped into the following three typologies: (1) households which have experienced income growth since the 1970s or which have accumulated land, access to land or capital equipment; (2) households whose income is relatively stable and/or which are managing from month to month with more than half of them containing one or more members receiving a pension; and (3) households which are falling into greater poverty, which are obviously not coping (Francis 2000).

4.5: Modifications to Livelihood Approach

Understanding heterogeneous needs and capacities among rural sub-populations is fundamental for the successful designing and implementation of democratic agrarian reforms aimed at empowering those who were historically disadvantaged. While considering the effects of the changing South African political economy on de-agrarianisation, the rest of Part II presents an in-depth investigation of rural livelihoods in the former homeland area from micro-level household/individual perspectives. I attempt to reveal the heterogeneity in livelihood diversification strategies as well as diversity in interests, objectives and ideologies among rural sub-populations. The conventional application of livelihood approach which examines the observed inter-household heterogeneity in livelihood strategies, however, may not analyse the internal dynamics of community/familial social relations (Bryceson 1999; Bank 2005). Therefore, the analysis of the changing rural livelihoods in South African contexts requires understanding the origin of diversity as well as tracing the long-term process of social differentiation.

Chapter 5 investigates the origin of the diversity among rural sub-populations through historical analysis of land tenure institutions in the former Transkei, one of the largest homelands. The origin of the diversity is attributed to differential reactions by rural sub-populations, i.e. the conservatives vs. the progressive, and to tribal conflicts and colonial conquests over land during the late 19th century. Later, the colonial government opted to impose distorted forms of customary land tenure systems in the reserves to prevent a few progressive individuals from accumulating land that might result in the emergence of the landless. Close historical examination nevertheless reveals that the institutionalisation of distorted customary land tenure systems in turn promoted de-agrarianisation and social differentiation along differential access to better paid off-farm activities under the migrant labour system throughout the 20th century.

Chapter 6 traces the long-term process of social differentiation, by examining heterogeneous reactions by rural sub-populations to social transitions, i.e. either accumulation or impoverishment, based on intensive livelihood surveys from the former Transkei communities. First, I identify and develop distinct livelihood strategies currently observed in the study area.

Then, I present cases of representative households for each of the identified typologies using personal experiences, educational attainments and urban migration. These exercises should contribute to highlighting internal dynamics of familial relations as well as local processes of economic differentiation in response to the changing South African political economy.

Part II: South African Case

Chapter 5:

**TRACING THE ORIGIN OF DIVERSITY IN
RURAL SOUTH AFRICAN SOCIETY¹**

5.1: Introduction

In the literature on South African political economy, the South African economic structure has often been described as a stark institutional duality, consisting of modern urban sectors, and of subsistent rural sectors. This structure was formed under the colonial and apartheid regimes accompanied by the institutionalisation of the migrant labour reserves within the wider capitalistic economy (Wolpe 1972; Hendricks 1990; Mamdani 1996). The dual economy framework, however, tends to treat rural African societies not only as passive subjects but also as economically and ideologically homogeneous entities. Consequently, the framework is not suitable for analysing the long-term effects of de-agrarianisation on local processes of social differentiation within African societies.

Indeed, South African rural societies were always heterogeneous, fluid and dynamic. Nevertheless, the colonial government attempted to contain the endogenous dynamics of African societies through land administration to effectively rule the homelands as cheap migrant labour reserves. The migrant labour system in turn promoted de-agrarianisation and social differentiation along with differential access to non-agrarian assets and activities in South African peripheries throughout the 20th century. It is then necessary to trace the origins of diversity in order to understand the current inter-household heterogeneity in livelihood diversification strategies. To do so, an alternative analytical framework other than the conventional dual economy framework is required to capture the diverse interests of rural sub-populations.

This chapter attempts to complement the historical discontinuities in the livelihood study in rural South Africa. The main objectives are to investigate the origin of the diversity among rural sub-populations in the former Transkei, to estimate the effects of the colonial administration on rural land tenure institutions on the institutionalisation of the migrant labour system and the subsequent de-agrarianisation, as well as to propose an alternative analytical framework to capture rural social differentiation within the dual economy. Section 5.2 reviews debates on dual economy, migrant labour system and land tenure institutions in South Africa, and proposes an

¹ This Chapter is a modified version of Iiyama (2005), “‘Two Worlds’ within Rural Community in South African Dual Economy: Through Historical Analysis on Land Tenure Institutions in Transkei,” *Journal of African Studies*, No.67, pp.69-89.

analytical framework. Section 5.3 examines the origin of diversity and socio-economic differentiation in African societies. Section 5.4 reveals how the land tenure administrations induced heterogeneous reactions by rural sub-populations. Section 5.5 reviews the current land tenure institutions observed in the former Transkei villages and briefly interprets the current land use from a historical perspective.

5.2: Dual Economy, Land Tenure and Migrant Labour Systems

5.2.1: Dual Economy Debate

The term ‘dual economy’ is in general defined as the two contrasting modes of production *between* the urban capitalist sector and the pre-capitalist rural sector. The South African version, with its notorious racially segregated migrant labour system, is often defined as the pre-capitalist mode of production *within* the capitalistic mode of production (Wolpe 1972). One needs to apply a historical context to understand how and why the South African version of the dual economy was formed.

During the early colonial periods, a small number of emancipated African individuals adapted themselves to market opportunities created by thriving urban markets. After the late 19th century, however, the discovery of gold and the subsequent capitalistic industrial development wiped out any momentum for African farming to flourish. Instead, rural African agropastoral societies were rapidly transformed into labour reserves. Backed by the mining capitalists with their voracious demand for cheap labour, the segregationist government sought administrative measures to mobilise rural African males by destroying the conditions for the self-sufficiency while controlling labour influx. Successive interventions resulted in the institutionalisation of distorted forms of communal land tenure under which the Tribal Authorities were authorised to allocate permissions to occupy residential plots to families of migrant labour. At the culmination of the process, the government passed the notorious Land Acts (the Natives Land Act of 1913 and the Native Trust Land Act of 1936) which prohibited Africans from obtaining farmlands outside the scheduled reserve areas.

After the inauguration of the apartheid regime in 1948, the state further empowered the Tribal Authorities in homeland administration while tightening territorial segregation. The contemporary South African economic structure came to be characterised by stark institutional dualities: modern capitalistic urban economies and subsistent customary (not necessarily pre-capitalistic) economies. The agriculture sector also became dualistic, i.e. the white commercial farming sector under freehold tenure vs. the subsistent African farming sector managed through the Tribal Authorities (Mamdani 1996). That is how the South African version of dual economy came to be defined as the pre-capitalistic mode of production *within* the capitalistic mode of production, for example, by Wolpe (1972).

5.2.2: Insights from Land Tenure Studies

Exactly what is meant by ‘the pre-capitalistic (rather, distorted customary) mode of production *within* the capitalistic mode of production’? To understand the nature of the South African version of dual economy, one needs to know exactly how the customary land tenure governed the mode of production in rural communities. Some historians, (e.g. Davenport and Hunt 1974; Carstens 1981; and van der Post 1986; van der Post 1989), compiled detailed records of land administrations in the reserves/homelands. Their studies show us that the colonial/apartheid land administration was an attempt by white administrators to reconcile mutually alien concepts of well-defined western private ownership and indigenous customary ownership. The effects of the tenure administration on rural development were, however, not considered until recently.

Hendriks (1990) and Mamdani (1996) succeeded in bringing academic interests to the historical enquiry on institutional dualism in contemporary South Africa. They show that the distorted forms of communal tenure were the major administrative measure for the state to control African migrant labour through the Tribal Authorities. They describe the mode of production in the homelands as non-market, describing ‘land made remained outside the scope of the market, while defined as a customary and communal possession’ under which community members would be guaranteed equitable allocation. While they emphasise the logic of the capitalistic state in the institutionalisation of customary land tenure systems, however, they barely enquire about how the distorted customary tenure institutions affected the livelihoods of ordinary individuals. Instead, the majority of rural residents are treated rather homogeneously as either the impoverished proletariat (Hendriks 1990) or the subjects (Mamdani 1996).

While Hendriks and Mamdani focus on the institutional aspects of land tenure, sociologists-cum-historians, such as Bundy (1987, 1988) and Ntsebeza (2002, 2005), highlight endogenous dynamism within African societies. Their work highlights the diverse reactions of individuals to land administration, reveals the increasing differences between the progressive and the conservative, and sketch changing social relations. Ntsebeza (2005) indicates, for example, “*whereas Mamdani (1996) emphasizes the dichotomy between the urban and the rural, the stress is, without ignoring the urban and rural relations, variations within the rural population...*” (Ntsebeza 2005:59).

I believe that the institutional framework emphasised by Hendriks (1990) and Mamdani (1996) and diverse reactions by African sub-populations to the administration highlighted by Bundy (1987, 1988) and Ntsebeza (2002, 2005) should be complementary in historically understanding the social transformation of the homelands. The issue is, then, how to construct a relevant analytical framework by integrating these two perspectives.

5.2.3: Search for an Alternative Analytical Framework

Two approaches to rural African institutions are discussed in Chapter 2: the population pressure school and the social relation school. The population pressure school takes methodological individualism and assumes that non-market institutions would evolve into individualised forms in response to population pressures. In contrast, the social relation school claims that the egalitarian redistributive norms of pre-capitalist societies preclude endogenous development and institutional evolution. Neither of these deductive approaches can be uncritically applied to the South African case, where the state extensively intervened in distorting indigenous pre-capitalistic institutions. Mamdani (1996) claims that either ‘the market universalism championed by the IMF’ (similar to the population pressure school) or the theory of ‘economy of affection’ echoed by Goran Hyden (social relation school) should miss the fact that contemporary market underdevelopment in rural Africa has been the by-product of the colonial administration (Mamdani 1996:12-22, 137).

Nevertheless, as the main objective of the South African study includes examining the effects of changing social relations in the de-agrarianisation process on rural development, the perspective of social relation approach may have some implications in guiding this analysis. Indeed, I consider it effective to modify the analytical framework proposed by Akabane (1971) and to integrate his version of African dual economy model into that of Wolpe (1972) to guide historical investigation of land tenure institutions. The deductive social relation model (Akabane 1971), of course, could not be uncritically applied to analysing South Africa’s realities. Then, why and how can the Akabane model be modified in analysing South African rural institutions?

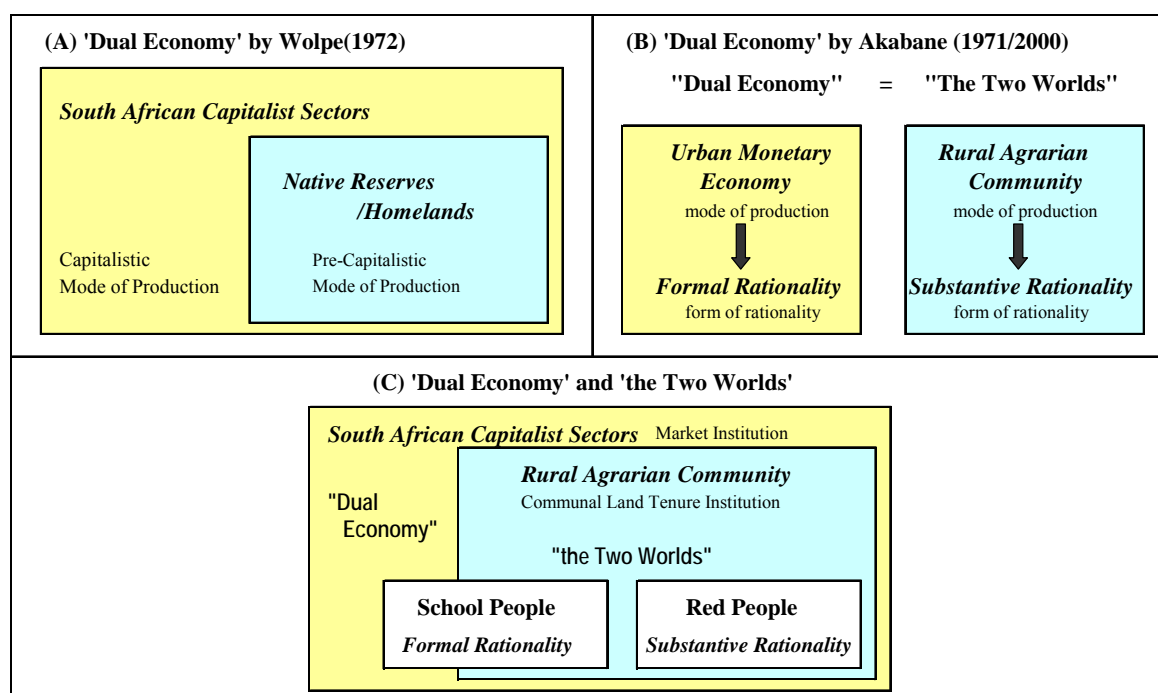
Figures 5.1(A) and (B) summarise and compare the dual economy models presented by Wolpe (1972) and Akabane (1971). While Wolpe emphasised the mode of production in defining the South African dual economy, Akabane, influenced by Hisao Otsuka’s *Basic Theory*, proposed the two-dimensional perspective, i.e. not only the mode of production but also the form of rationality bounded by inter-personal social relations. According to Akabane’s model, African social relations are governed by collective interests of lineage-based tribal communities in which individuals are bounded by egalitarian norms, in contrast to impersonal/individualistic social relations in market economies. Then, in presenting his version of African dual economy model, Akabane paralleled the difference between the urban and rural modes of production with the difference between individualistic formal rationality and collective substantive rationality, by using the concepts of Max Weber. Akabane thought this dual economy model represented the South African situation well, where the highly developed urban capitalist sector and the stagnated rural subsistent sector existed side by side. These distinctive ‘two economies’ were linked through the migration labour system but rural livelihoods would never converge into urbanised ones due to the strong conservativeness of African tribesmen.

The reality, however, was far more complicated than the Akabane model assumed. For example, Akabane, who cited Houghton’s (1964) expression ‘the man living in the two worlds’, may have misinterpreted this to infer traditional and conservative behaviours of African migrant labour. Then Akabane concluded that the vicious circle of low agricultural productivity and rural poverty was both to facilitate and to be influenced by subsistence and egalitarian norms of tribal

communities. As a result, Akabane identified the institutional dualism with ideological ‘two worlds’. Among South African anthropologists, however, the term, ‘the two worlds’, has been used to describe ideological cleavages ‘within’ rural African populations (Mayor 1961). In that sense, ‘the two worlds’ is not synonymous with ‘dual economy’ in the South African context.

It would be easy to point out more shortcomings of Akabane model which was based on the limited information available to him during the 1960s. I rather propose to modify his proposal on the two-dimensional perspective into Wolpe’s dual economy model, to guide the historical analysis of land tenure institutions in rural South Africa. The model presented in Figure 5.1 (C) implies that there existed heterogeneous sub-populations with divergent interests within rural communities. The origin of such diversity in rural African societies at the time the colonialists encountered them is reviewed in Section 5.3. Then Section 5.4 describes the land tenure administrations which defined the institutional dualism by imposing ‘pseudo-egalitarianism’ (interpreted later) to rural populations and highlights divergent reactions to such constraints by rural sub-populations.

Figure 5.1: Interpretations of ‘Dual Economy’ in South African Studies



5.3: The Origin of Diversity in the 19th Century Transkei

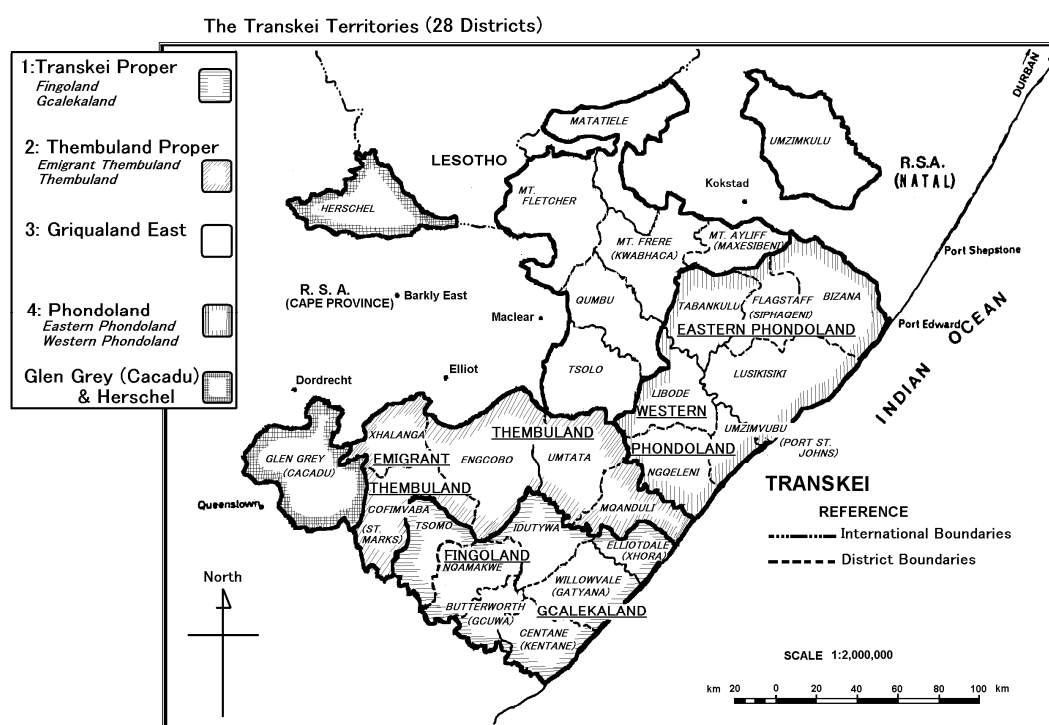
5.3.1: Ethnic Background and Reorganization after *Mfecane*

The Transkei, located in the present Eastern Cape, was the largest homeland. The majority of residents in the Transkei have been the Xhosa-speaking people, one of the linguistic groups belonging to the Southern Nguni. The Xhosa-speaking peoples could be further classified into independent tribal clusters, such as the Thembu, the Gcaleka, and the Phondo (van Warmelo 1962; Carter et al.1967; Hammond-Tooke 1970; Hammond-Tooke 1975). The Transkei or 'Transkei Territories' was divided into four distinctive territories, i.e. Transkei proper, Thembuland proper, Griqualand East, and Phondoland, each grouped according to ethnic clusters or the periods of colonial conquests (Figure 5.2).

The pre-colonial Nguni societies were 'Iron Age tribesmen' with a mixed subsistence economy, characterised by the absence of specialisation and trade. Bundy (1988) described them as:

...the division of labour is not between families but amongst the members of a family; it is based primarily upon the sexual division in each family...The low level of the social division of labour means that the society is unlikely to accumulate much surplus... they were pastoralists-cum-hoe-cultivators at a modest technological level and at a relatively undifferentiated level of economic activity (Bundy 1988:16-25).

Figure 5.2: The Transkei Territories



based on: U.G.61/1955(1955), p.42. Carstens(1981), p.23. Beinart & Bundy(1987), p.xxii.

Schapera (1962, 1967) in turn claimed that the Southern-Nguni societies had been flexible in that acquiring membership had never been exclusive to kinship members. In the Cape societies, sons of chiefs often built independent chiefdoms by fission, therefore the Southern-Nguni societies had a built-in fissiparous tendency (Schapera 1967; Carter et al.1967; Hammond-Tooke 1975).

Their flexibilities in social structures were evident at the regional social reorganisation after *mfecane* (meaning ‘clashes’), the chain reaction of attack, counter-attack, devastation and dispersal, which were triggered by the Zulu king’s invasions into neighbouring tribes in the early 19th century. Warfare also led to the flight of many tribes or portions of tribes before an invading enemy from the oppression of a conqueror. Those who survived the devastation had two options open to them: to accept incorporation into the Zulu state or to flee southwards. Thousands chose to flee, creating further upheavals among the southern Nguni. Some managed to retain their independence elsewhere, but others were forced by local conditions to seek the protection of an alien chief. The Cape Nguni tribes received a large number of refugees from tribes uprooted by Shaka’s raids into Natal (Maylam 1986; Schapera 1967).

5.3.2: Ethnic and Ideological Cleavages

The most well-known refugees to migrate southwards were the Mfengu or Fingo². They were a heterogeneous group comprising people of diverse origins. The Mfengu arrived in the southern Nguni territories not as a cohesive community but as small groups or individuals. Initially, they came to Gcalekaland where they approached petty chiefs or headmen and requested food and shelter. Some became incorporated into Xhosa society, perhaps by intermarriage. Other Mfengu groups became Xhosa clients, performing services and paying tribute in return for the use of land and the loan of cattle (Hammond-Tooke 1975; Mayer 1980; Maylam 1986).

The Mfengu played crucial roles in promoting social transformation during the 19th century, at the time the Cape colonial government reached into the frontiers. The Mfengu had broken their ties with particular chiefdoms and found themselves in an insecure world in which the bonds of collective social organisation had been undermined. Their response to this challenge was to adopt a more individualist mode of existence. The Mfengu first paid loyalty to alien chiefs. However, the inferior, dependent status associated with clientage soon rankled with many Mfengu and they started to look towards the Cape colonial society as an avenue for their advancement; they therefore started to seek protection and favour from merchants and missionaries. Many Mfengu were to become prominent in the ranks of the African peasantry at the Cape and from the later 19th century, members of the Mfengu educated elite could be found at the forefront of early African opposition movements (Maylam 1986).

Within tribal societies receiving the Mfengu, however, many commoners remained loyal to their hereditary chiefs. They came to be known as ‘Red’³ people in comparison with ‘School’ Mfengu. While School people aspired to white civilisation, Red people tried to defend their African identity. The opposition between Red and School might be compared to the historical rift between

² It is said that *amaFengu* (wanderer) was turned into (ama)Fingo. The Mfengu therefore was a blanket term for refugees from tribes such as Hlubi, Bhele, Zizi, et al (van Warmelo 1962:47-48. Hammond-Tooke 1975:14).

³ ‘Red’ Xhosas were named after the custom of conservative Xhosas who wore red blankets dyed with charcoal. The Mfengu, however, were known to adopt Western education and customs.

Catholics and Protestants. In both cases, the older ideology was conservative, supporting the reproduction of existing social forms and discouraging change. Red people perceived drastic social changes as the acts of deception, cruelty and greed by the whites, as well as of treachery by the converts who allied themselves with the whites (Mayer 1980).

Thus, during the 19th century, two ideologies prevailed among ordinary people in rural villages and introduced a division or ideological cleavage, between the majority of Red people and the minority of individualistic Mfengu, School people (Mayer 1961; Mayer 1980; Maylam 1986).

5.3.3: Socio-Economic Division and Regional Variability

The cleavages were further intensified as the Mfengu allied with the colonial government, who in turn endeavoured to weaken the power of hereditary chiefs. Severe wars and conflicts between the colonial army and African societies in the frontiers followed. The British colonial government favoured the Mfengu as their loyal allies or military collaborators in an attempt to conquer African societies (Hammond-Tooke 1975; Maylam 1986). The colonial government granted land expropriated from defiant conservative Africans to loyal Mfengu. The rapid stratification in once relatively equitable societies often caused poor commoners to attack newly emerging landed property owners. The tempo of social transformations due to the colonial conquests and to the ethnic divisions in the 19th century were, however, varied across the regions within the Transkei territories. Those areas most affected came to be predominantly occupied by School people (Mayer 1980).

The south-western parts of Transkei had been originally claimed by the conservative Gcaleka (Figure 5.2). The Gcaleka were so defiant that the colonial government conquered them and took their land in 1857 (Bundy 1988). The colonial government then settled displaced Mfengu in the southern part of the Gcalekaland, later came to be known as 'Fingoland' (Hammond-Tooke 1975). There were some other emigrant groups of people, such as factions of Thembu, who had avoided tribal conflicts around Umtata in 1837 and had settled in Queenstown. Those Thembu were later conquered by the British army and finally settled in the northern part of the former Gcalekaland in 1865. The area became known as 'Emigrant Thembuland' (District of Cala 1883; Ntsebeza 2002). The coastal areas of Gcalekaland, where the defeated Gcaleka had escaped to, is said to have remained relatively conservative (McAllister 2001). North-eastern Phondoland is also said to have been relatively stable in the late 19th century (Mayer 1980; Beinart 1982).

Despite regional variability, the Southern Nguni societies in the late 19th century Transkei were amazingly fluid and experienced drastic internal changes. The interactions of various factors, ethnic and ideological cleavages and colonial conquests, had brought about tremendous changes into African 'tribal' communities, i.e. fostering internal social divisions and stratifications along with 'supra-tribal' (Mayer 1961) 'separate interests' (Bundy 1988).

5.4: Land Tenure Administrations and Reactions

5.4.1: Land Tenure Forms Introduced in the Transkei

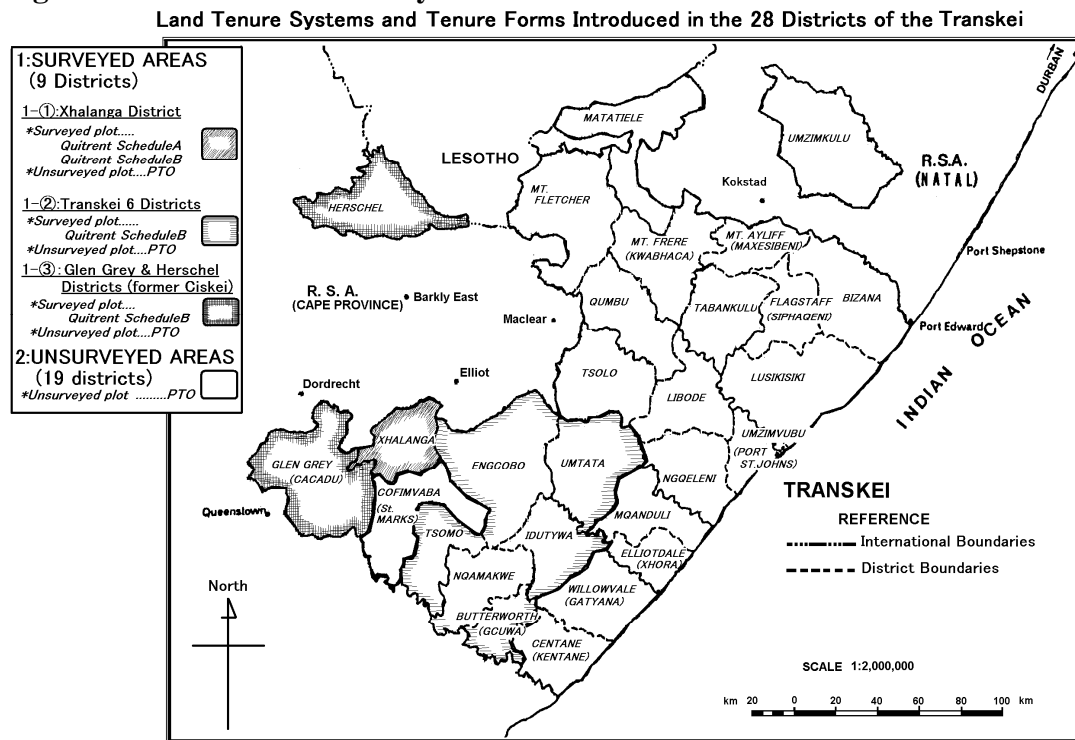
In this section, I initially investigate aspects of the land tenure systems introduced in the Transkei, before chronologically tracing land administrations. The institutional characteristics of the distorted communal tenure, emphasised by Hendriks and Mamdani, are highlighted. This exercise should clarify how the imposition of customary/communal tenure has been controversial to rural African societies.

In most parts of the former homelands, including the Transkei, the communal land tenure system in place was that under which each head of household was granted permission to occupy (PTO) a garden (*igadi*) and a field (*amashimi*) on ‘commonage’, after applying for allocation through administrative headmen and agricultural officials. Commonages, referred to unsurveyed lands under the state-controlled South African Native Trust, formally promulgated by the 1936 Land Act (Carstens 1981; Union of South Africa 1955, 70). Hendriks (1990, 15) described this distorted version of communal tenure, or the PTO system, which guaranteed access to mere homestead plots as a ‘smoke screen for the real extent of proletarianisation’.

The distribution of tenure forms introduced in the 28 districts of the Transkei is presented in Figure 5.3. Among these districts, the communal (PTO) tenure system was found in the 19 districts, which Carstens (1981) called ‘unsurveyed districts’, in northern Phondoland and coastal Gcalekaland. In the southern nine districts, the system of individual tenure (quitrent title)⁴ was in operation along with communal tenure (Carstens 1981, Davenport 1986, van der Post 1986). These nine districts happen to fall under Fingoland, Emigrant Thembuland and the former Ciskei Glen Grey and Hershel Districts which were incorporated into the Transkei in 1975. These districts correspond to the areas that had experienced drastic social transformations during the late 19th century. Among the nine districts, Xhalanga District in the northern part of Emigrant Thembuland had three different forms of land tenure, two types of quitrent titles⁵ and PTOs. In other words, in Xhalanga, one could find holders of quitrent title A, of quitrent title B, and of PTO among neighbouring clusters of homesteads.

⁴ Quitrent was a ‘system of land title at the Cape introduced with the earliest Free Burghers, by which property holders paid an annual rent in lieu of services. Governor Sir Cradock in 1813 introduced Perpetual Quitrent, in which the title of any Loan Place could be converted’ (Rosenthal ed. 1966: 432). Quitrent and freehold titles have been regarded as individual tenure in land administrative history. Quitrent title holders have, however, been restricted such as from mortgaging, thus quitrent has been differentiated from completely freehold tenure (for example, Davenport 1986: 8, 15).

⁵ Schedule A was applied to some title holders in the Xhalanga district, and they were regarded as ‘proprietor’ with the right to bequeath his property. Quitrent title holders under Schedule B in the Xhalanga district or other surveyed districts, however, were not allowed to bequeath their land by will, but were obliged to follow the table of succession (Carstens 1981: ch.1&2.).

Figure 5.3: The Land Tenure Systems in the Transkei

based on; U.G.61/1955(1955), p.42. Carstens(1981), p.23. Beinart & Bundy(1987), p.xxii.

The important regulations, including status of holders, rights of holders, plot size and so on, for each tenure form is summarised in Table 5.1. I divide the 28 districts into the 9 surveyed districts and 19 unsurveyed districts. Quitrent titles were given to proprietors or registered holders of surveyed plots, while PTOs were issued to unsurveyed plots. Thus, the first difference between the individual tenure system (quitrent title) and the communal tenure system (PTO) is whether the plots concerned were surveyed/registered or not. The second concerns regulations including inheritance. The holders of quitrent title under Schedule A, only applicable to ‘the proprietors’ in the Xhalanga District, were allowed to bequeath by will property, while holders of quitrent title under Schedule B, had to follow customary law (prescribed in the so-called ‘Table of Succession’) to determine the male heir. The proclamation did not provide for PTO holders to bequeath the site upon the death of holder; the right of occupation was cancelled and the site became available for re-allotment to a widow or other family member as duly selected by the Tribal Authority. In that sense, the quitrent title under Schedule A was more secure than the quitrent title under Schedule B or PTO (Carstens 1981: 66, 73). But if you consider the overall provisions on the alienation of land, the liability of forfeiture, the differences between the quitrent titles under Schedules A and B, and PTO were small.

Table 5.1: Regulations on Tenure Forms introduced in the 28 Transkei Districts

	1: Surveyed Districts (9 Districts) surveyed plots ...individual tenure (quitrent) unsurveyed plots.....communal tenure (PTO)						2:Unsurveyed Districts Communal Tenure unsurveyed plots(PTO)only	
District	1-①: Xhalinga District			1-②: southern Transkei 6 Districts		1-③:Glen Grey District & Hershel District		2: 19 Districts
Tenure Form	Quitrent Schedule A	Quitrent Schedule B	PTO	Quitrent Schedule B	PTO	Quitrent Schedule B	PTO	PTO
Proclamation	No.241of 1911 No.196 of 1920	No.241 of 1911 No.196 of 1920	No.170 of 1922 No.147 of 1956	No.227 of 1898 No.241 of 1911	No.174 of 1921	No.26 of 1936 No.R.188 of 1969		No.26 of 1936
holder	proprietor	registered holder	allotment holder	registered holder	allotment holder	registered holder	allotment holder	allotment holder
[1]survey	○	○	×	○	×	○	×	×
[2]regulations								
right to bequeath by will	○ entitled	×	×	×	×	×	×	×
mortgage	×	×	×	×	×	×	×	×
transfer	×	×	×	×	×	×	×	×
sub-division	△	×	×	×	×	×	×	×
appropriation or forfeiture	revolt against authority	revolt, crime, absence, non- beneficial occupation	crime, absence, non- beneficial occupation	revolt, crime, absence, non- beneficial occupation	crime, absence, non- beneficial occupation	revolt, crime, absence, non- beneficial occupation	crime, absence, non- beneficial occupation	crime, absence, non-beneficial occupation
[3] one-man one-lot								
garden plot	0.428ha	0.428ha	0.428ha	0.428ha	0.428ha	0.428ha	0.428ha	0.428ha
field plot	2.569ha	3.426ha	—	3.426ha	—	3.426ha	3.426ha	4.282ha

The so-called 'one-man one-lot principle' in allocation was applied both to the quitrent titles and the PTO (Carstens 1981, Union of South Africa 1955). That principle prescribed that a head of household should not be allowed to have more than one plot of garden and one arable field for a wife. The maximum size of garden or homestead was set at about 0.428 ha (1 acre or 0.5 morgen) and that of field or arable land was about 2.569-4.282 ha (3-5 morgen).⁶ According to Davenport (1966, 1986) and Hammond-Tooke (1975), the white government had first proposed to give a minority of Africans land up to 46.75 ha (55 morgen), but the proposal was rejected when Cecil Rhodes thought of implementing the Glen Grey Act of 1894. Furthermore, the government found it necessary to burden African farmers to protect Boer farmers by reducing competitive pressures (Bundy 1988).

Hendricks (1990) described the principle of one-man-one-lot as the imposition of 'pseudo-egalitarianism' on land acquisition for Africans in the reserves, as 'vaguely reminiscent of the pre-colonial system of land allocation', or as an attempt to accommodate 'proletarians in abeyance'. The upper limit on the size of arable fields not only handicapped African farmers in relation to the white farming sector but also denied any opportunity for entrepreneurial African farmers to accumulate as much land as they wished, while guaranteeing equitable access to inefficient occupiers. The principle of one-man one-lot was the device which would justify allocating plots of land equally among community members under the name of 'customary' rules and regulations.

Contrary to the prediction by Akabane (1971) that as long as African communities remain unchanged land allocation should be determined according to the principle of substantive rationality, the homeland tenure administration was an attempt to suppress dynamics inherent in African societies and to contain individual initiatives within a 'customarily given tribal mould' (Mamdani 1996). The struggles and resistance by African individuals to such land tenure administration is investigated in the next section.

5.4.2: Reaction of African Societies to Land Administration

Why have the land tenure systems in the southern parts of the Transkei become so complicated? One must look into the land tenure administrations during the late 19th to early 20th centuries, by highlighting reactions of African agents to such policies, as Bundy and Ntsebeza did. This exercise should reveal how contentious the imposition of pseudo-egalitarianism through land administrations was to some individuals demanding civil rights equal to whites. One needs to understand simultaneously the dynamic aspects of both changes in ideologies for colonial administration and ethnic and ideological cleavages within African societies.

The ideology of Sir George Grey,⁷ who became Cape Governor in 1854, was the most influential

⁶ Rosenthal (eds. 1966: 362) calculates that 1 morgen is about 2.11654 acres or equivalent to 0.85 ha.

⁷ From 1841 to 1845 George Grey was Governor of South Australia, and from 1845 held a similar office in New Zealand. He arrived in the Cape in 1854. After going back to New Zealand in 1861, he entered Parliament and from

in shaping land administration policies in the mid-19th century. Sir Grey was well known for his strong commitment to civilising African societies. He thought it necessary to liberate Africans from tribalism and to incorporate them into market economies to invigorate the Cape economy and to procure tax revenue. He encouraged the curtailment of chiefs' roles in allocating land to their subjects and proposed the introduction of individual tenure instead (Benyon 1980; Benette et al. 1986; Bundy 1988; Mamdani 1996). In 1856 Sir Grey introduced quitrent tenure to the Mfengu in the Crown Reserve on the Ciskei border (Davenport and Hunt 1974). The individual tenure was first spread among collaborative Africans, especially the Mfengu in Ciskei. After 1857, when Sir Grey conquered the defiant Gcaleka (Benyon 1980; Bundy 1988) and encouraged the settlement of the Mfengu and Thembu into the areas vacated, the quitrent tenures were brought into the southern Transkei, Fingoland and Emigrant Thembuland (Bundy 1988).

As social transformation was spreading in the southern parts of Transkei, some educated Thembu followed the practices of Mfengu. Those progressive Mfengu and Thembu, or School People started to challenge the authority of chiefs by demanding exclusive rights to land and approached the white administrators for issuing certificates instead of paying allegiance to chiefs. The 'enclosure' of land by the minority of progressive farmers induced social tensions within African societies. The majority of conservative Africans and chiefs harboured adverse feeling towards the relatively well-off peasants or emerging 'landowners'. Social strains and internal dissension even led to a breakout of violence in the southern Transkei. These disturbances invited colonial interventions (Benyon 1980). The case of Xhalanga District will be briefly illustrated below based on Bundy (1988) and Ntsebeza (2002, 2005).

In Xhalanga the chiefs were responsible for allocating land to their Thembu subjects when a group of emigrant Thembu started to settle in 1865. After 1872, when the first Mfengu arrived in Xhalanga, Mfengu farmers were allocated farms by white administrators. The Thembu chiefs first allowed the practice to gain favour from the Mfengu, while not allowing their Thembu subjects to do the same. By 1878 the Mfengu and School Thembu became successful farmers and profited from economic opportunities and accumulated wealth (Bundy 1988). The discontent of conservative Red people toward the well-off peasants intensified to the extent that in 1880, the poor allied with the chiefs and attacked the well-off peasants and burned down their properties. The colonial army intervened to suppress the rebellion. The Thembuland Commission of 1883, a body appointed to resolve the aftermath of the rebellion, discussed the possibility of granting loyal Africans individual tenure with generous terms. The government expelled rebels from their land, and rewarded loyal Mfengu and Thembu farmers with the vacated areas in buffer zones between white settlers and rebels (District of Cala 1883; Benyon 1980; Bundy 1988; Ntsebeza 2002).⁸

1877 to 1879 was Prime Minister. In 1894 he returned to England and he died in 1898 (Rosenthal ed. 1966: 221-222). The policy that Sir Grey followed with the Maoris during his first governorship of New Zealand 1845-1853, strongly influenced his assimilation policy in South Africa (see Benyon 1980: 60).

⁸ A white officer left the following record: 'The lands left vacant by the natives who joined the late war have been disposed of by the Tembuland Commission to Natives of various nationalities... Tembu, Fingos, Gaikas, and Bastards. The location of this mixed class of natives on the Border has already proved itself to be a wise measure,...and they form an excellent border police without cost to the Government' (District of Cala 1883).

The discovery of gold reefs in the Rand in the mid-1880s, however, substantially increased the political influence of mining capitals vis-à-vis liberal merchants within the Cape colony. The mining capitalists were not enthusiastic about promoting African agriculture and introducing individual tenure to loyal Africans. They saw such policies as discouraging rural Africans from supplying labour for the mines. Instead, the mining capitalists sought alternative tenure measures to ensure that rural African societies supplied migrant labour and shouldered administrative costs and fiscal burdens.. The implementation of the Glen Grey Act of 1894 by Cecil Rhodes, Prime Minister of the Cape, symbolised the shift in policies (Bundy1987; Bundy 1988; Hendricks 1990; Rosenthal 1966).

One of the major objectives of the Glen Grey Act of 1894, hailed by Rhodes himself as mechanism of social engineering, was to experiment a new form of African self-government by providing provisions for tax and local council systems (Hammond-Tooke 1975; Laurence 1976). Those provisions, however, were in fact aimed at curtailing the franchise rights of the Africans. Rhode's vision of the rapid extension of the Bill to the Transkei districts encountered widespread peasant opposition and resistance, especially from the Mfengu, who had acknowledged themselves as loyal allies to the government. As a result of the high level of discontent, the provision of labour tax was dropped by the government in 1905 (Bundy 1987).

The Glen Grey Act also contained provisions concerning the issue of quitrent title to streamline procedures of surveying, issuing and registering. Under these provisions the allotment could not be devised by will but it devolved on one male person in accordance with the rule of primogeniture. In the case of a transfer resulting from the death of a registered holder, the simplified transfer procedures placed matters largely in the hands of the magistrate to make the transfer less expensive. The location headmen where the land was situated came to play a greater role in assisting the magistrate to compile necessary particulars of the transactions. According to van der Post (1986), the Glen Grey system was hailed as '...a compromise between Native and European systems, the services of headmen being usefully employed in the administration of the district affairs' by administrators (van der Post 1986: 218- 219).

The tenure provisions of the Glen Grey Act of 1894 were extended to the six southern Transkei districts (Butterworth, Nqamakwe, Tsomo, Idutywa, Umtata and Engcobo) by Proclamation No. 227 of 1898 (Carstens1981: 22-23). The Glen Grey version of tenure system was introduced into the District of Xhalanga much later in 1911. According to Ntsebeza (2002), the process of introducing the Glen Grey provisions on quitrent title into Xhalanga provoked severe opposition from farmers. In Xhalanga, bordering white areas such as Indwe and Elliot in the north, some progressive farmers knew that white farmers had been given quitrent title with more generous provisions on transfer and on inheritance than the Glen Grey Act would provide. White farms could be devised by will. The Xhalanga farmers tenaciously demanded the right to negotiate for equally generous terms (Ntsebeza 2002).

Under Proclamation No. 241 of 1911, as amended in Proclamation No. 196 of 1920, the

Xhalanga farmers, mainly those established progressive farmers who already held certificates of occupation possibly after the recommendation by the Thembuland Commission of 1883, were termed as ‘proprietors’ under the conditions set forth in Schedule A on the receipt of quitrent titles. Schedule B set forth the conditions on the quitrent titles given to persons approved in terms of Proclamation No. 227 of 1898 in the six surveyed Transkei districts and those newly recommended Xhalanga individuals in terms of Proclamation No. 241 of 1911. A quitrent title with conditions prescribed in Schedule A was more secure than that prescribed in Schedule B in that allotments under Schedule A might be bequeathed by will while allotments under Schedule B could not (Carstens 1981). The Xhalanga farmers, however, never won rights fully equal to those enjoyed by the whites (Ntsebeza 2002). The provisions of Schedule A may have been the biggest concession the Xhalanga farmers could have received at the time when South Africa was opting for segregation.

Hopes of citizenship for progressive Africans diminished as South Africa intensified the drive towards segregation. Hendriks (1990) noted that the Glen Grey version of dividing the land into minute allotments and the principle of one-man one-lot were the cornerstones of the type of land holding adopted by the South African Native Affairs Commission of 1903-1905, the 1913 Land Act and subsequent land legislations. While the practice of survey was being abandoned, the principle of trust tenure or PTO system was incorporated as a main feature of the Native Trust and Land Act of 1936 (Davenport 1986). The provisions relating to the occupation of land in the unsurveyed commonages were contained in Proclamation No. 174 of 1921 for the six surveyed districts, Proclamation No. 170 of 1922 for Xhalanga District, Proclamation No. R 188 of 1969 for Glen Grey and Hershel, and Proclamation No. 26 of 1936 for the remaining 19 unsurveyed districts of the Transkei (Carstens 1981).

5.4.3. ‘Community’ in 20th Century Transkei

In this section, I present how the institutionalisation of distorted communal tenure influenced de-agrarianisation in the Transkei during the 20th century.

After the reinforcement of racial discriminative policies and the Land Acts of 1913 and 1936, the conditions of African agriculture rapidly deteriorated. By the 1930s, soil erosion became so serious that reserve agriculture would soon fail to feed its populations. The extent of the impending crisis was serious enough to threaten the segregationist white government (Hendricks 1990). The main reason the state had set up the homeland administration was to ensure a sufficient supply of migrant labour, while not allowing Africans to settle permanently in urban areas. The total collapse of a self-sufficient base for rural Africans was not desirable and had to be avoided to discourage a stampede of impoverished rural Africans into cities. The National Party, which won the election in 1948, appointed many commissions to investigate land issues in the reserves, to identify the causes of the stagnating agriculture. It was the Tomlinson Commission of 1955 that proposed to the government the most comprehensive reform recommendations.

This Commission insisted that the lack of interest in agriculture and extensive land use practices among Africans had contributed to land degradation. The Commission pointed out that the land tenure systems in the homelands based on the 'one-man one-lot' principle was one of the major causes of agricultural inefficiencies, and regarded the drastic tenure reforms as a pre-requisite for agricultural development (Union of South Africa 1955).

'The principle of "one-man-one-lot" accordingly reduces every Bantu to a low level of uniformity with no prospects of expanding his activities nor of exercising his initiative. It is essential to make opportunities for the creation of class of contended full time Bantu farmers with holding of sufficient size to enable them to farm profitably and to exercise their initiative and to develop according to their individual ability and resources. The abolition of the "one-man-one-lot" policy is accordingly recommended...' (Union of South Africa 1955, 152).

The Tomlinson Commission tentatively estimated an 'economic farming unit' which would be required for Africans to become full-time farmers, for each ecological zone based on agronomical conditions. For example, in the southern Transkei, the Commission suggested that a family should own no less than 21.5 ha (25-26 morgen). The Commission recommended that the quitrent titles with the one-man one-lot principle be abolished and instead potential full-time farmers be given freehold titles so that they could accumulate more than one lot. It was also predicted that the transfer and concentration of land into the hands of a few full-time farmers in the homelands would inevitably create a class of landless surplus families. The Commission then estimated the number of surplus families in each ecological zone if the economic farming unit were applied (34 % of the total families in the case of Transkei), and recommended the implementation of industrial policies to create employment for such families (Union of South Africa 1955).

The Tomlinson recommendations on tenure reforms were, however, too radical for the apartheid government to accept. The government rejected the Commission's proposals on the abolishment of one-man one-lot principle, while insisting on not destroying the very foundation of 'tribal' culture (Union of South Africa 1956a; Union of South Africa 1956b).⁹ The Commission's proposals on rehabilitation or betterment schemes were adopted and implemented locally under the authority of the empowered Tribal Authorities. The measures used, including forced de-stocking and removals, were never popular. The struggles over the betterment and against the Tribal Authorities were well-documented by Hendricks (1990) and Ntsebeza (2000). Here, I highlight divergent reactions of Africans to the institutionalisation of one-man-one-lot principles or pseudo-egalitarianism.

⁹ 'The Government is not prepared to do away with tribal tenure of rural land and to substitute individual tenure based on purchase, nor does it propose to give preference to individual acquisition of land above Tribal and Trust purchase in the released areas.... The desired aim of stable occupational rights on allotments in Tribal and Trust areas must be secured rather by modernising the methods and the conditions which govern the allotment of land by tribal authorities. The Government is not prepared to agree at this stage to the acquisition for occupation of more than one economic farming unit by a single individual, and thus to become responsible for the possible development of ownership of large tracts of land by some, instead of the proper settlement of many.' (Union of South Africa 1956a:3)

Bundy (1988) documented how progressive farmers interpreted the imposition of the one-man one-lot principle. He quoted the reaction of an influential African spokesperson who had objected to this principle contained in the Glen Grey Act of 1894, and described a typical Mfengu farmer complaining about the rising social cost of agriculture. The illustrations below tell us that progressive Africans neither compromised nor gave up pursuing their interests even under adverse environments.

No man is allowed to occupy more than one lot. This shuts out all improvements and industry of some individuals who may work and buy...Surely Mr. Rhodes can't expect that all the Natives will be equal. He himself is richer than others... (Bundy 1988: 136).

...By 1909 he farmed on a substantial scale, cultivating a hundred acres, employing wage labour and leasing part of his property to tenants. For his own children, however, he was investing not in land purchases and survey fees, but in education: one son was in the final year at Lovedale, and the other engaged in medical training in Canada (Bundy 1988: 140).

There have been few descriptions of the perceptions of the conservative population on tenure administration in rural Transkei. It is thus indicative to note the anthropological work done by McAllister (2001) on the development of a new form of community relations based on neighbourliness in relatively conservative villages in Gcalekaland. Poor neighbouring households started to form reciprocal communal work parties to pool labour and implements to practice subsistence farming, as the institutionalisation of migrant labour was weakening the kinship system and changing the mode of production during the 20th century. McAllister (2001:189-191) insists that in his research areas, a sense of community has been maintained among neighbouring households despite and because of the long-term and sometimes permanent emigration of many people. This kind of subsistence-oriented communal work among neighbours somewhat resembles egalitarian communities in the original Akabane model, which Akabane dismissed negatively as the detriment to individual initiatives (Akabane 2001).

The 20th century Transkei societies, which have come to appear from the historical investigation of land tenure systems, may look somewhat like Figure 5.1(C), divided along ideological cleavages as if there are 'the two worlds' within rural communities in the dual economy. Contrary to Akabane's (2001) prediction that agricultural underdevelopment in rural South Africa could be attributed to the rigidity of tribal or communal mode of existence within dual economy, the imposition of 'pseudo-egalitarianism' may have contributed to the diverging away from farming by ex-progressive farmers and educated individuals, and to the maintenance of subsistent farming by the conservative population.

5.5: Explaining Under-Farming from Historical Perspective

5.5.1: The Background of the former Xhalanga District

The former Xhalanga District, with its central village town Cala, is located in the south-western part of the former Transkei (Figure 5.4). The District bordered the white farming areas in the north. While most of Xhalanga is hilly and mountainous with altitudes of about 1,500 m, its central part sinks to slightly sloping valley floors with altitudes of approximately 1,200 m. Most of the villages are located on relatively slight slopes with moderate gradients. The annual rainfall is approximately 635 mm-889 mm, but fluctuates yearly. The rainy season is from November to March when the average temperature is 21°C, while the winter is dry and extremely cold, even frosty and windy from May till August (Union of South Africa 1955).

Xhalanga District consisted of 19 Administrative Areas (Figure 5.5) each administered by a headman. Each Administrative Area was sub-divided into sub-villages with a village sub-headman. For example, the Mnxe (or Emnxe) Administrative Area, the largest among the 19 Administrative Areas, consisted of 8 sub-villages. The number of households residing in a sub-village varied greatly, ranging from 30 to 400 households. In 1998, legislation was passed that aimed at integrating historically disadvantaged African communities into fiscally sound neighbouring white communities. The north-eastern part of Xhalanga District, including the eastern part of Mnxe Administrative Area, was merged with Elliot to form a new Local Municipality (shown by the dotted line in Figure 5.5). The Sakhisizwe Local Municipality became effective at the end of 2000.

Figure 5.4: The Former Transkei and the Eastern Cape Province

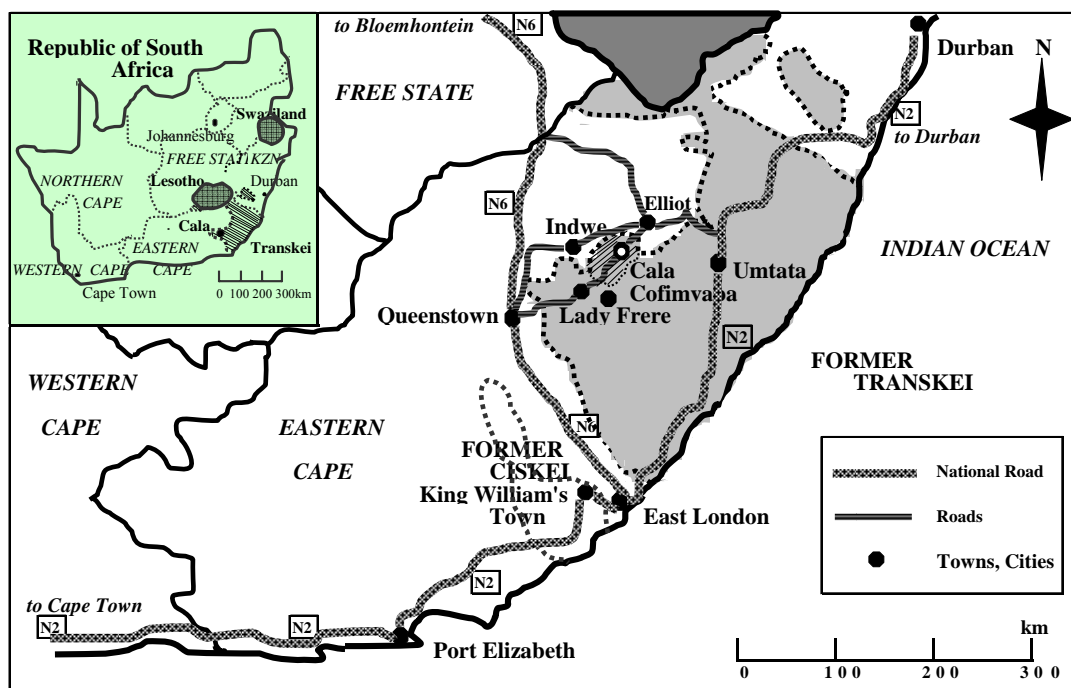
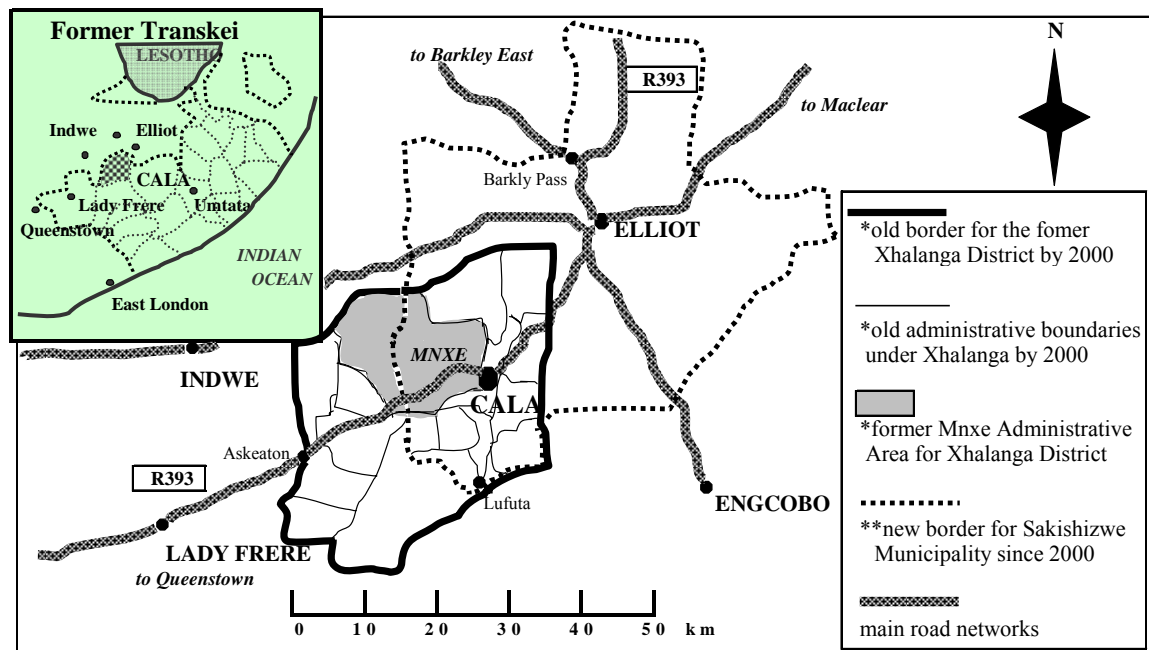


Figure 5.5: The former Xhalanga District and the Sakhisizwe Local Municipality



*based on Government Gazette (1957), and other records on proclamations concerning the Xhalanga District.

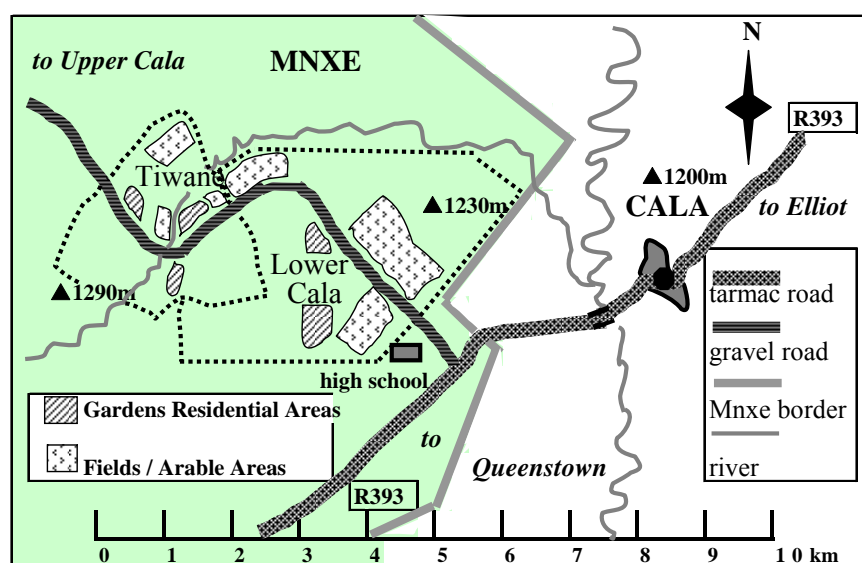
**sources from Municipal Demarcation Board. Municipal Demarcation Act No.27 of 1998. Effective from the end of 2000.

5.5.2: Land Access and Tenure Forms in Lower Cala and Tiwane Sub-Villages

Although the administrative boundaries of the former Xhalanga District are no longer effective, sub-villages are still crucial arenas for residents. For example, McAllister (2001:25-27, 124-125) emphasises the importance of territorial sections consisting of a group of homesteads, 10 to 40 each, occupying a small local area within a sub-village in analysing the livelihoods of rural South Africans.

A sub-village could be an appropriate territorial unit to investigate inter-household socio-economic differentiation. Among the 19 Administrative Areas, the Mnxe Administrative Area was deliberately chosen, as the area has always been the epicentre of political events and struggles in the region (Ntsebeza 2005). It is also one of the areas where the loyal School people had been given farms by the colonial government during the late 19th century. I identified two sub-villages of the Mnxe, Lower Cala and Tiwane (Figure 5.6), for detailed analyses on land tenure and livelihoods. I first visited and conducted a pre-survey in Xhalanga between May and September 2000. In subsequent visits in February to March and October to December 2001, October to December 2002, September 2004, and January 2006, I implemented intensive interviews and participant observations on the livelihoods of the households. Lower Cala and Tiwane have somewhat contrasting backgrounds in terms of land tenure forms. I briefly review the land access and tenure forms by households in the two sub-villages (Table 5.2).

Figure 5.6: Lower Cala Sub-village and Tiwane Sub-village



Lower Cala is one of the eight sub-villages of the Mnxe Administrative Area. Gardens (residential plots) of approximately 400 households are scattered on the south-eastern foot (the altitude is approximately 1,230 m) of a mountain, which divides Lower Cala and Tiwane. Since 2000, the 39 households whose gardens are located in the northern part of the residential area of the sub-village have been interviewed with the help of a villager. Though it is not possible to strictly categorise the villagers into distinctive ethnic groups due to the inter-marriage, 20 households are Mfengu (Fingo) while the other 19 are Thembu. Most male household heads were born and grew up in Lower Cala.

Table 5.2: Land Access and Tenure Forms in Lower Cala and Tiwane

	Lower Cala		Tiwane	
no. of households	39		30	
no. (%) of Mfengu hhs	20(51)		11(36)	
	<i>with field</i>	<i>without field</i>	<i>with field</i>	<i>without field</i>
no.(%) of households	21(54)	18(46)	17(57)	13(43)
mean size of garden (ha)	0.26	0.25	0.25	0.25
mean size of field (ha)	4.36	-	2.88	-
forms of tenure	Quitrent title	PTO	PTO	PTO

Twenty-one households have both a garden and a field, while the remaining 18 have only a garden. Most of the 21 field holders acquired the garden and the field with quitrent titles through inheritance from their fathers. While the mean size of a garden is 0.25 ha, the mean size of a field is 4.36 ha with the mode of 3 ha, but some households own fields of 7-12 ha. Those that own larger fields are Mfengu households, and could be the descendants of the progressive peasants who had been given farms by the colonial government. In turn, 18 households without a field

used a PTO to acquire a garden through the Tribal Authority as they had no land to inherit.

Tiwane is the smallest sub-village of the Mnxe Administrative Area, behind the mountain (1,230 m-1,300 m) in the west of Lower Cala. All the 30 households were interviewed with the help of a sub-headman. According to the villagers, until the early 1960s a white farm had existed on the location and had employed some African workers. After the Transkei territories gained self-governance in 1963, the white farmer left and the territory government took over the land. Land was made available for allocation to the Mnxe residents who had applied for fields through the Tribal Authority. In 1972, some Mfengu and Thembu households started coming to Tiwane to acquire plots with PTO certificates.

Today, 17 households have both a garden and a field with respective PTOs, while the remaining 13 households have only a garden. Most of the field-holding household came from other Mnxe sub-villages in 1972 and were generally allocated a 0.25 ha garden and a 3 ha field. In contrast, those who came from outside the Mnxe or those who were late only got a garden, because there was no longer sufficient land to be allocated. Even after the 1990s, some outsiders settled in Tiwane where they had neither friends nor relatives, although they knew they would get only gardens. In such cases, a sub-headman held a community meeting to determine whether a site should be given to the newcomer. If the application was accepted, the Mnxe headman would arrange to issue a PTO.

5.5.3: Under-Farming in Lower Cala and Possible Explanation

Usually most households in the study area grow maize with beans and often a variety of vegetables for home consumption, on their garden plots. However, there was a marked difference in field use between the two sub-villages. In Lower Cala, only 8 households out of 21 field holders with quitrent title deeds cultivate maize with beans on their fields while the other 13 households do not cultivate their fields. In contrast, most of the Tiwane field-holders with PTO certificates plough their fields. The mean land holding/use by sub-village with the result of the analysis of variance (ANOVA) is shown in Table 5.3. The land holding size does not differ significantly between the two sub-villages. While the mean land holding size only for the field holders is significantly higher in Lower Cala (4.36 ha) than in Tiwane (2.88 ha), the proportion of land under use is significantly higher in Tiwane (81%) than in Lower Cala (33%), reflecting that more than half of Lower Cala field holders do not cultivate their fields. Lower Cala villagers agree that the abandoning of fields has been prevalent for some time.

Indeed, this ‘under-farming’ phenomenon was reported to increase since the 1960s and 1970s in the homelands (McAllister 1992; Andrew et al. 2003). Its possible causes are shortages or lack of a range of inputs, i.e. labour, draught oxen and manure, and capital/cash. Assume, for example, that the difference in the field use in Lower Cala and Tiwane might be attributed to constraints specific to individual households, such as the availability of adult labour. The numbers of adult members, especially of males, are slightly higher in Tiwane than in Lower Cala, but not

significantly different (Table 5.3). This at least implies that labour availability alone could not explain the phenomenon of under-farming by the quitrent title field holders in Lower Cala.

Factors behind under-farming by field holders are complicated and cannot only be attributed to a single factor but rather to multiple factors and changing social relations.

Table 5.3: Land Access, Land Use, and Labour Availability in Lower Cala and Tiwane

	all households			field-holding households		
	Lower Cala	Tiwane	F-value	Lower Cala	Tiwane	F-value
no. of households	39	30		21	17	
total size of land holding (ha)	2.60	1.88	1.56	4.36	2.88	5.77**
total size of land under use (ha)	0.97	1.50	1.92	1.38	2.32	2.76
land under use/land holding (%)	58	83	6.05*	33	81	13.31***
mean no. of adult males present	1.00	1.37	2.04	1.00	1.53	2.05
mean no. of adult female present	1.51	1.67	0.19	1.57	1.59	0.00
mean no. of adults present	2.51	3.03	1.49	2.57	3.12	1.09

(note): ***. Significant at 1%, **. Significant at 5%.

For example, asked of major causes of under-farming, most villagers in Lower Cala refer to the increasing cost of ploughing, which has in turn resulted from the replacement of communal labour practices by an expensive tractor service. In the past, communal labour practices, such as exchanging labour, draught oxen, and farming implements among neighbouring households, helped households without capital to plough for subsistence. Such practices have, however, become more and more obsolete due to increasing economic inequalities among neighbours, and eventually been replaced by tractor services, which costs the cash equivalent of or more than a month's off-farm income for a poor family. As a result, in Lower Cala, only well-off field-holders can afford to pay for ploughing service as well as for inputs (seeds and fertilisers) and implements (tools). In contrast, in Tiwane while most households use the tractor service for ploughing, poor field-holders often exchange implements, oxen and labour, for tasks such as planting and weeding among neighbouring households.

How can one explain the difference in the prevalence of communal labour practices or social relations, one of possible factors affecting under-farming in the two sub-villages? If the analytical framework developed in Figure 5.1.(C) is applied, Lower Cala could be interpreted as a case where an individualistic mode of existence has been prevalent. Tiwane might be a case where villagers have been oriented to maintaining a subsistence base for its members.

5.6: Discussions and Concluding Remarks

This Chapter has attempted to trace the origin of the diversity in ideology among sub-populations in rural African societies through the historical analysis of land tenure institutions in the former Transkei. As South African political economy literature has tended to define the dual economy as the relation between the contrasting modes of production and to see it as the urban-rural dichotomy under which the rural populations are regarded as rather passive and homogeneous entities, it has paid little attention to heterogeneous reactions and internal social dynamic within African societies. Then I proposed to apply the two-dimensional perspective, simultaneously focusing on the modes of production and on the divergent forms of rationality, to analysing rural social relations in a dualistic economy, as an alternative to the conventional dual economy framework.

The investigation of the distorted communal tenure, as emphasised by Hendricks and Mamdani, revealed that ‘the one-man one-lot’ principle had effects of imposing the ‘pseudo-egalitarianism’ principle to the rural African societies. However, the chronological analysis of tenure administration in Bundy-Ntsebeza fashion revealed diverse reactions by African sub-populations to the imposition of pseudo-egalitarianism. As a result, while the South African economic structure became highly dualistic, the socio-economic cleavages in rural populations remained as de-agrarianisation proceeded.

The historical investigation of land tenure institutions revealed the origin of diversity among rural populations in the former homeland areas. The next task is to investigate how these rural sub-populations have responded differently to the social transitions throughout the 20th century, i.e. the institutionalisation of the migration labour system, its collapse with structural unemployment, and the transition to the post-apartheid period. Chapter 6 presents substantial variances in livelihood diversification strategies to cope with social transition, within small communities, i.e. Lower Cala and Tiwane.

Part II: South African Case

Chapter 6: REVEALING THE PROCESS OF SOCIAL DIFFERENTIATION IN A RURAL SOUTH AFRICAN SOCIETY¹

6.1: Introduction

In South Africa, it has been long recognised that rural livelihoods have diverged away from purely agrarian activities. Off-farm income has always been the most important source of income for most rural households in the former homeland areas (Leibbrandt et al. 2000; Francis 2000; Eastwood et al. 2006). As a result, the media often contends that there is no land question in the post-apartheid period in the form of demand for land, but rather a labour problem in the form of demand for jobs. Yet, with more than 80% of the South African land surface still legally in the hands of whites, agrarian reforms should remain one of the most important political agendas (Ntsebeza and Hall 2007).

Some researchers attempt to re-evaluate the contribution of subsistence crop and livestock activities and natural resources, which they claim have been rather under-estimated, to rural livelihoods, to stimulate broad-based agrarian reform debates (Cousins 1996; McAllister 2001; Shackleton et al. 1999; Andrew et al. 2003). Nevertheless, recent evaluations of land reform pilot projects or household livelihood surveys conducted in the former homeland areas are rather pessimistic for agriculture to lead pathways out of poverty in the former homelands (Bradstock 2005; Eastwood et al. 2006), while under-farming, a phenomenon of abandoning arable land, has been on the increase for some time (McAllister 1992; McAllister 2001; Andrew et al. 2003). The possible causes of under-farming are a combination of shortages or lack of a range of inputs and the loss of co-operative activities among neighbouring households due to the increasing socio-economic cleavages (see Chapter 5).

Others argue that agrarian reforms targeting poor rural households would not achieve the desired goals, by claiming that a household can no longer operate as a functional economic decision-making unit under the stresses and strains of the social transition (Bank 2005). In the past, a major feature of rural households was that migrant members kept faith in building family farms in the villages under the migrant labour system. The late 20th century social transitions, i.e. urban unemployment and dismantling of apartheid, seemed to disconnect urban-rural and employment-land linkages in rural livelihoods. With a shift from remittances to welfare grants as

¹ This Chapter is a modified version of the manuscript co-authored by Iiyama with Ntsebeza and prepared for the submission to *Social Dynamics*.

the main source of rural income, there has been a shift of functional families to female-headed households that neither farmed effectively nor received regular remittances from absent industrial workers (Bank 2005).

Yet, the stereotype image of a disintegrated household has masked not only heterogeneity in rural livelihood diversification strategies among rural sub-populations but also continuing spatial and sectoral linkages with which rural households are still maintaining in coping with transition to secure rural livelihoods. Precise knowledge on the effects of changing social relations on under-farming and the targeting criteria for assistance is fundamental for democratic agrarian reforms. Rural development in the post-apartheid period needs both historical and livelihood perspectives to enquire how and why different rural sub-populations have survived with a range of assets and farm/off-farm activities.

This Chapter attempts to reveal the long-term process of social differentiation and the internal dynamics of house-holding, and their effects on rural development, especially on land use, based on an intensive survey of Lower Cala and Tiwane areas of the former Xhalanga District. To effectively do so, I apply and extend the livelihood approach to identifying distinctive livelihood diversification strategies and to revealing how differently rural sub-populations have coped with social transitions and secured rural livelihoods, either accumulation or impoverishment. These exercises should contribute to highlighting the internal dynamics of social and familial relations in response to the changing South African political economy.

6.2: Assumptions & Methods

6.2.1: A Note on Application of Livelihood Approach to the South African Context

In application, the livelihood approach usually assumes a household as the basic analytical unit. Ellis (2000:19-21) indicates that in the South African context, where the migrant labour system has been firmly institutionalised, the analytical unit should include all the individuals who have a stake in rural settlement, even non-remitting migrants who can call on the assistance of those living in the homestead. Indeed, Bradstock (2005) and Eastwood et al. (2006) apply the livelihood approach to the analysis of rural livelihoods in the former homelands to derive policy implications for agrarian reform.

Yet, Bank (2005) argues against the application of the livelihood approach to the South African case to derive effective policy suggestions, questioning its assumption of rural households as functional economic decision-making units. He claims that the livelihoods model takes inadequate account of the extent to which rural social relations have been transformed with the collapse of apartheid and the introduction of new rural development policies under the new government. He notes the increasing fragility of rural households under conditions of stress associated with social transition:

...rural households are increasingly unable to hold themselves together under conditions of strain associated with social transition. As the youth left, so many established migrants began to lose faith in the project of building their family farms in the villages. Many stopped remitting income... (on the other hand) in the post-1994 period, these (social welfare and pension) payments, which had been racially determined in the past with blacks receiving pensions only once every two months, were suddenly equalized and increased, ensuring that households with older members suddenly found themselves better off than many of those who had previously had a number of migrant workers... The shift from remittances to welfare grants as the main source of household income means there was a shift of functional families... to female-headed households that neither farmed effectively nor received regular remittances from absent industrial workers. (Bank 2005, 157-181)

In other words, Bank criticises the conventional livelihood approach as generally treating rural households as 'black boxes' without paying attention to their own internal dynamics, constantly adapting and responding to changes in the structural conditions within which they are made to survive. Then, for policy and research purposes, which entity can replace a household as the arena that mediates the interaction between macro-level social changes and reactions of individuals? Rather than dismissing it, I attempt to extend the conventional livelihood approach to enquire into the internal dynamics of rural house-holding in response to urban structural unemployment, as did Murray (1995, 2000) and Francis (2000). For the first step, I develop the typology of the current distinctive livelihood strategies and categorise the surveyed households accordingly. In the second stage, I present life histories, especially education and migration experiences as well as investment in rural livelihoods, of representative households for the distinctive livelihood strategy categories. They reveal that some households have managed to resist disintegration and have coped with social changes, while others have not. This resiliency depends on personal/familial experiences of accumulation, which in turn differ across generations and depend on the levels of asset endowments.

6.2.2: Assumption and Survey Methods

Here the conventional assumptions of the livelihood approach are reviewed. In the livelihood literature, the livelihood is defined as the assets (natural, physical, human, financial and social capital), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household (Ellis 1998; Ellis 2000). A livelihood strategy means a portfolio of farm and off-farm activities. Precise knowledge of livelihoods, i.e. assets and activities, as well as the social relations and institutions affecting them, would help identify links between livelihood strategies and standards of living and make connections between macro-level social changes and micro-level livelihoods adaptations. To guide this research, I make the assumption below, following Francis and Hoddinott (1993), Francis (2000), Barret et al. (2001a) and Ellis (2000).

At village or community level, different households adopt different livelihood strategies

according to their particular assets and access status. Furthermore, within the household, the strategies of individuals are likely to be constrained by and to overlap with the livelihood strategy of the household. For example, households with more assets (especially educated members) are likely to adopt strategies including regular off-farm income activities and often engaged in farm activities as they afford to purchase inputs. They also afford to invest in higher education of family members as part of diversification strategy. However, households without assets tend to be engaged in low-return off-farm activities while failing to invest in productive farm activities and in the education of family members.

To collect information, the survey included a quantitative method based on a household questionnaire on livelihoods, i.e. assets (family composition, education of members, access to land and ownership of animals), activities (crop and livestock activities, off-farm activities), and qualitative methods using life-histories of individuals (especially on migration experiences, educational attainments and familial relationship) as well as field observations. For activities, while various authors highlight contribution of a particular activity to South African rural livelihoods (e.g. McAllister (2001) on subsistence maize production; Ainsile (2005) on cattle holdings; and Hajdu (2005) on off-farm activities) I treat these activities holistically and reveal inter-household heterogeneity in these portfolios.

6.2.3: Developing Distinctive Livelihood Strategies in South African Context

The ability of households or individuals to survive and their adaptability to external changes should be reflected in adopting particular livelihood strategies. When heterogeneous livelihood strategies are observed among rural sub-populations, the first task is to classify each household into livelihood strategy clusters. This method has the potential to offer better guidance for the type of support for the poorest households (Ellis 2000). I employ cluster analysis (Everitt and Dunn 2001) to differentiate heterogeneous households, following Iiyama et al. (2008).

Then which criteria can be used to categorise households? Proportional contributions of farm and off-farm income-earning activities are often used, as income is the most direct and measurable outcome of the livelihood process (Ellis 2000; Freeman and Ellis 2005). As Ellis (2000) acknowledges, income comprises not only cash components but in-kind contributions (consumption of own-farm produce) to the material welfare of the household. In places like rural Kenya, incomes from crop and livestock sales arise out of the produce not consumed at home, so cash components of farm incomes can be safely used also to reflect home consumption aspects (Freeman and Ellis 2005; Iiyama et al. 2008 and Chapter 8). This, however, cannot be applied to situations in the former homelands of South Africa, where most households do not produce sufficient food crops for subsistence but must purchase. Access to regular off-farm income activities contribute more to income inequality among the rural population than agricultural incomes, i.e., revenues from sales of maize, vegetables and livestock products, which consist of a small portion (less than 10%) of total household income in the former homeland households (Leibbrandt et al. 2000; Eastwood et al. 2006).

However, in-kind contributions from land-based farm activities to the wealth of households in the former homeland areas are no less important as McAllister (2001) claims for maize and Cousins (1996) and Ainsile (2005) claim for livestock. That is why some rural populations have kept interest in them despite few commercial values attached to them. Yet of course the levels of engagement in/commitment to subsistence land-based activities among rural households can be heterogeneous. In turn, Eastwood et al. (2006) suggested that the majority of the former homeland households are likely to have the only one off-farm income sources, i.e., pension, remittances or casual incomes. This indicates that if we use only off-farm cash income categories to classify households into distinctive farm types, we could not differentiate households with different levels of engagement in/commitment to subsistence land-based activities, which critically depend on long-term livelihood strategies of personal accumulation and investment. For example, assume that there are two households that derive income from old-age pension, and one owns some livestock and grows maize for home consumption while the other does not. The household with more animals and that grows maize is more food secure than the other household. Thus it is important to deliberately take the values of land-based activities into consideration.

In Section 6.3, I categorise the surveyed households into the distinctive livelihood strategy typologies using estimated values of maize yields and livestock along with various off-farm income activities as criteria. Then, with the identified clusters, the section investigates differences in asset endowments and the status of land use. Section 6.4 provides life histories of representative households for each of the livelihood clusters and examines personal/familial experiences of accumulation in response to macro-level social changes by livelihood strategy.

6.3: Inter-Household Heterogeneities in Livelihood Strategies

6.3.1: Major Livelihood Activities in the Study Area

The former Xhalanga District, located deep in the former Transkei near the border with the white farms, has historically consisted of heterogeneous populations in terms of ethnicity, ideology and wealth as seen from the historical analysis presented in Chapter 5. To gain detailed information on inter-household heterogeneities in livelihood strategies and internal dynamics of social relations, I decided to focus on the 69 households residing in the two adjacent sub-villages, Lower Cala and Tiwane, in the former Mnxe administrative area.

The brief profiles of the two sub-villages are provided in Table 6.1. Among 69 households, 55% had a field and garden, while the rest only had a garden. Of these, 52% were male-headed, 41% were widow-headed, and the rest were headed by single women. On average, the age of household heads was 59.9 years old with 4.9 years of education.

In the study area, the current major livelihood activities are off-farm income activities, along with subsistence maize and livestock production. At the time of survey, all of the households were

receiving some forms of off-farm income (Table 6.2). However, most (91%) of the households were at least engaged in growing maize (often intercropping with beans) either on garden/field, and two-thirds of the households owned at least an animal (cattle, sheep, goat). To compare relative contribution of off-farm activities and farm activities to total household wealth, I estimated the values of maize yields and livestock at market prices (US\$ 1 was equivalent to R 8.2 in 2002). One kilogram of maize was converted to a value of R 1.2, while cattle were estimated at R 2,500/animal, sheep at R 200/animal, and goats as R 100/animal at 2002 local prices. In total, off-farm income activities contribute to 63% of household wealth on average. Estimated values of maize yields were just 2%, while those of livestock were 35%.

Table 6.1: Socio-Economic Profiles of Surveyed Households

	statistics
total number of households	69
no. of hhs Lower Cala / Tiwane	39 / 30
% of hhs with a field	55
% of male headed hhs	52
% of widow headed hhs	41
mean age of hh heads	59.9
mean education years of hh heads	4.9

Table 6.2: Major Livelihood Activities in the Study Area

	% of households engaged in	mean contribution to household wealth
<i>off-farm income earning activities*</i>		
wage	13	7
business	9	3
remittance	9	14
pension	51	28
casual	20	10
total off-farm income activities*	100	63
maize**	91	2
livestock production**	64	35

* those households receiving income from particular sources.

**those households growing maize, and those households owning at least an animal.

6.3.2: Identification of Livelihood Strategy Clusters

The results of the cluster analysis which grouped the households into typologies with similar livelihood strategies are shown in Table 6.3. The five distinctive livelihood strategies or five clusters of households were identified. Below we interpret each of the clusters.

Table 6.3: Livelihood Strategy Clusters²

	[A] remittance/ casual	[B] pension	[C] remittance/ casual & livestock	[D] pension & livestock	[E] wage/ business & livestock	F-value
no. of households	13	17	11	18	10	
% of households	19	25	16	26	14	
<i>estimated values of household wealth</i>						
total estimated wealth(R)	4,783	7,936	17,552	38,958	35,122	12.30 ***
total off-farm income(R)	4,292	7,549	3,727	10,353	20,204	19.74 ***
estimated maize value(R)	152	222	252	505	1,008	5.05 ***
estimated livestock value(R)	338	165	13,573	28,100	13,910	11.95 ***
<i>proportions of disaggregated sources' contribution to total wealth</i>						
wage & business income(%)	0	1	0	4	56	85.02 ***
remittance (%)	55	6	13	2	1	13.19 ***
pension income(%)	0	86	0	20	0	300.82 ***
casual income(%)	35	1	8	0	0	8.59 ***
estimated maize value(%)	3	3	1	1	3	1.02
estimated livestock value(%)	7	2	77	72	40	86.03 ***

*** statistically significant at 1%, ** statistically significant at 5%

² Analysis of Variance (ANOVA) was employed to test the differences in means among the clusters. ANOVA is a dummy variable regression and useful when there are continuous dependent variables (ex. income) and discrete explanatory variables (the clusters). While some authors ask to test for normality and/or homoscedasticity, other authors suggest that violations of these do not much affect the results of analyses if mean values across distinctive clusters are reasonably different, as I believe that the analyses performed in this thesis are the case.

Cluster [A] (19% of the total households) derived most of their wealth (estimated at R 4,783) from off-farm income activities, either remittance or casual activities (7 households receive remittance, 5 on casual, and 1 on both). Households belonging to this cluster received on average R 350 monthly either from absent family members or casual off-farm income activities, such as washing, cleaning and collecting firewood for neighbours. Cluster [B] (25% of the total households) earned 86% of their wealth (estimated at R 7,936) from pension. Cluster [C] (16% of the total households) derived 77% of their wealth (estimated at R 17,552) from livestock, while also receiving remittance or casual off-farm incomes. Cluster [D] (26% of the total households) earned 72% of their wealth (estimated at R 38,958) from livestock, while pension accounted for 20%. Cluster [E] (14% of the total households) derived 56% of their wealth (estimated at R 35,122) from either wage or business incomes while holding 40% of their assets in the form of livestock.

Overall, the particular off-farm income activities the households depend on and whether they own livestock seem to define a livelihood strategy, while a proportion of estimated maize value, 1-3% across the clusters, hardly contributes to differentiating the households. Clusters [A] and [B] derived most of their income from a single low-return off-farm activity (casual, remittance or pension) and rarely owned livestock, in comparison to clusters [C] and [D] which also depended on those off-farm activities, but held more wealth in the form of livestock. Cluster [E] earned more off-farm income than the others (twice to five times as much), and also kept livestock. In relation to cluster [C], [D] and [E] households (56% combined), cluster [A] and [B] households (44% combined) may be comparatively more vulnerable to possibilities of losing off-farm income sources, as they rarely had livestock assets (the number of livestock owned will be examined in Section 6.3.4).

6.3.3: Socio-Economic Profiles

The socio-economic profiles of household heads for each of the livelihood clusters are presented in Table 6.4.

Table 6.4: Socio-Economic Characteristics of Households

	[A] remittance/ casual	[B] pension	[C] remittance/ casual & livestock	[D] pension & livestock	[E] wage/ business & livestock	F-value
% of male-headed HH	69	18	91	44	60	
% of widow-headed HH	8	76	18	56	20	
age of HH	41.3	74.1	50.5	69.1	53.8	30.34 ***
edu level	5.2	3.2	6.3	4.6	6.5	3.44 **
no. of family members	5.7	7.4	7.2	9.2	8.1	1.64

*** statistically significant at 1%, ** statistically significant at 5%

A total of 91% of cluster [C] (remittance/casual and livestock) households were headed by a male, while 76% of cluster [B] (pension only) households were headed by a widow. On average, cluster

[A] (remittance/casual only) household heads were the youngest (41 years old) followed by their [C] counterparts with livestock (50 years old), while cluster [B] and [D] (pension with or without livestock) heads were the oldest (74 and 69 years old respectively). Older heads of clusters [B] and [D] were the least educated (3.2 and 4.6 schooling years), while cluster [E] (wage/business and livestock) heads (6.5 years) were the most educated. While the cluster [A] (remittance/casual only) heads were younger than those of cluster [C] (remittance/causal without livestock), cluster [A] heads had fewer years of education than cluster [C] heads (5.2 years vs. 6.3 years).

Education is often interpreted as one of the most important human capital assets in the livelihood literature (Ellis 2000; Francis 2000). Higher education has been necessary to get local employment or start business, as detailed descriptions will be given in Section 6.4. The heads of cluster [E], middle-aged and educated, were the few who were locally employed as teachers or NGO staff or running small business, such as taxi, butcheries and catering services. Heads of cluster [D] households were often retired school teachers or businessmen, who had accumulated livestock wealth. However, over the decades the probability of acquiring employment in urban areas has fallen while the youth has had more opportunities for schooling. The late husbands of the cluster [B] widows may have had few opportunities for schooling in their youth, but had been employed at mines, farms or factories. In contrast, younger heads of clusters [A] and [C] had more educational opportunities than the older generations had, but their chances of remaining in urban jobs has been declining, and if retrenched they have no choice but to find casual jobs.

6.3.4: On-Farm Activities and Under-Farming

On-farm crop and livestock activities by the livelihood strategy clusters are shown in Table 6.5.

In the study area, the distribution of livestock assets, especially cattle and sheep, was highly skewed between the [C], [D], [E] clusters and the [A], [B] clusters. The cluster [D] (pension and livestock) households owned more livestock, followed by clusters [C] (more cattle) and [E] (more sheep) households, while clusters [A] and [B] (remittance/casual or pension without livestock) rarely owned cattle and sheep but did own a goat. However, while land allocation was regulated under the one-man one-lot' principle (see Chapter 5), currently 45% of households only have access to a garden (Table 6.1). The average size of a garden is 0.25 ha (50 m × 50 m) and that of a field is 3 – 4 ha. Eighty per cent of cluster [E] (wage/business and livestock) households have a field, while only 31% of the cluster [A] (remittance/casual only) households do. The cluster [A] household heads, who are relatively young, probably could no longer be allocated a field, as land was already scarce. On average the cluster [E] households had larger pieces of land (4.1 ha) as a garden and a field combined.

The state of land use and maize production by the livelihood clusters is also shown in Table 6.5. Note that I may have underestimated the yields as we did not count law (harvested as fresh corn to be boiled and eaten) and wasted harvests as McAllister (2000) did, as well as the values of other crops (beans, vegetables mainly for home consumption).

Table 6.5: Land Access and Livestock Holdings

	[A] remittance/ casual	[B] pension	[C] remittance/ casual & livestock	[D] pension & livestock	[E] wage/ business & livestock	F-value
no. of cattle	0.1	0	5.2	9.2	3.9	15.69 ***
no. of sheep	0	0	0.8	23.4	17.6	3.46 **
no. of goats	1.5	1.6	4.5	5.1	6.4	1.29
% of HH with a field	31	59	55	56	80	
total land owned (ha)	1.2	2.4	1.7	2.3	4.1	2.66 **
area cropped (ha)	0.3	0.6	1.1	1.5	3.0	7.06 ***
% of area cropped/owned	25	25	62	65	73	
maize yield(kg)	127	185	210	421	840	5.05 ***
maize purchased(kg)	128	94	77	56	55	0.53
maize sold(kg)	46	56	71	189	388	2.99 **
maize expenditure (R)	42	171	291	356	769	6.18 ***
% of HH using manure	46	65	100	100	100	
% of HH using chemicals	8	35	45	50	70	

*** statistically significant at 1%, ** statistically significant at 5%

The cluster [E] households used larger areas to grow maize (73% of the total land owned), followed by clusters [D] and [C]. In contrast to the livestock-owning households, clusters [A] and [B] households cultivated only small areas. Cluster [E] and, to a lesser extent, cluster [D] households gained more yields and were more likely to sell some of their surplus to neighbours, while cluster [A] and [B] households were more likely to be 'deficit farmers', who purchase maize to compensate for their low yields. However, expenditures on implements (especially hiring tractor services) and inputs often exceeded gross incomes from selling maize surplus. The cluster [E] households, especially, spent more for ploughing a field. All of the livestock-holding ([C], [D] and [E]) cluster households used animal manure, while cluster [A] and [B] households did less so.

The households leading a livelihood strategy with low-level off-farm income as well as without livestock were more likely to under-farm in general than those with livestock (Table 6.6). The next section attempts to elaborate on the internal dynamics of social and familial relations which may have affected the dissolution of cooperative activities in the study area, through detailed life histories. Representative households are selected for each of the livelihood clusters corresponding to the mean profiles provided in Table 6.4. In the following, case studies are arranged in order from older to younger generations.

6.4: Personal Experiences of Accumulation/Impoverishment

6.4.1: Cases of [B] (Pension without Livestock) Strategies

As investigated in the previous section, cluster [B] households were headed by old pensioners; 76% of them were widows, aged 74 years old on average. While 59% of them had access to a field, most of them had few animals and hardly cultivated their arable land. As described below, most of the heads were widows of ex-mine/farm/factory workers. They had schooling of 3.2 years on average. From the 1940s to the 1960s, the late husbands of these women could seek employment in mines or white farms in the Cape through TEBA (The Employment Bureau of Africa) or through the Magistrate, even without formal education.

Case [B] 1: Qajana X... wife of a livestock-less male pensioner with a field, Lower Cala

Qajana was born in 1943. Her husband is Thembu and was born in Lower Cala in 1932. As the first born, he inherited the garden (0.25 ha) and field (3 ha) from his parents in 1970 with the title deed. During his youth, he completed Standard (Std) 2 and applied through the Magistrate for a job in the construction sector in Cape Town. He retired and came back to Cala in 1990, and since then has been a pensioner. Qajana and her husband have four sons (aged between 30 and 45 years). The first and third sons completed Std 5 and stay in Cape Town. While the third son is working as a plumber, probably introduced by his friends, the parents are not sure what the first son is doing there. The sons rarely send money home. The second son (Std 5) and the last son (Std 8) are unemployed and live in Lower Cala with the family. The family plants maize with

beans in the garden. They hire tractor services at R100 while planting seeds by broadcasting, as they neither have a plough nor a planter; they do own a *gaba* (spade). They have not cultivated the field for recent years as they have no money for fences and tractor. They get two bags (50 kg/bag) of maize from the garden and have to buy two more bags to fulfil their needs and they own no livestock. They depend on pension.

Case [B] 2: Noquestion M...livestock-less widow pensioner, without a field, Tiwane

Noquestion, a pensioner aged 78, was born in Queenstown. Her late husband was Thembu from Engcobo and the last born of his parents. Noquestion and her husband first moved to Cala Reserve. Her husband never went school but he applied for a job through the Cala Magistrate and worked at a dairy farm in Cape Town. In 1972 the husband and Noquestion came to Tiwane to build a homestead. They were allocated a 0.25 ha garden with PTO by the headman. However, her husband died in 1974. Noquestion has four sons, now in their forties and fifties. The first and second sons completed Std 4 and work in Gauteng mines. The third and fourth sons completed Std 6 and do informal jobs in Cape Town. Noquestion stays in Tiwane with nine grandchildren. One of them is grown-up but unemployed after having completed Std 5, while the others are still in school. As the sons rarely send money home, the family depends on Noquestion's pension (R 620/month). Her late husband used to purchase animals when alive, but all of them have since been sold. She has only seven goats now, which her sons received as in-kind payments in return for working for somebody. Noquestion and the grandchildren plant maize with beans and vegetables in the home garden. They hire tractor services at R 80 from the sole tractor owner in Tiwane (case [D]2) and purchase a bag of chemical fertiliser at R 70 and mix it with goat manure. While the goats sometimes destroy the crops, they get two bags of maize (50 kg/bag) and have to purchase four more bags. However, as Noquestion is among 13 members of the community garden on which she has a small plot (3 m × 3 m), she grows cabbages, carrots and spinach which she sometimes sells to neighbours at R 2/bunch.

6.4.2: Cases of [D] (Pension with Livestock) Strategies

Cluster [D] was headed by slightly younger pensioners (69 years old on average) than the cluster [B] households were. Of these, 44% were male, while 56% were widows. They were also slightly more educated (4.6 years of schooling), and as seen below they were often retired teachers or businessmen. Fifty-six per cent of them inherited a field and have accumulated large livestock holdings (valued at R 28,100) and invested in the education of their children.

Case [D] 1: Nodumo M...widow pensioner-cum livestock owner, with a field, LC

Nodumo was born in 1919. Her late husband was Mfengu, born in 1914 in Lower Cala. As he was the eldest son, he inherited a 0.16 ha garden and a 3.5 field with the title deeds in 1973 when his father died. When he received a teaching diploma he could not find a job. He worked as a machinist at the factory in Umtata until he retired. Nodumo herself obtained teaching diploma and taught in Piree in Ciskei. Nodumo has three sons and four daughters. She stays in Lower Cala with the disabled eldest son (late 50s) and four grandchildren (aged between 6 and 12 years). The parents educated all the children. The eldest son went to technikon and got three certificates for

mechanics, and used to work in Gauteng as a mechanical engineer. Since he got injured and retrenched, he has been unemployed and stays at home. The second son (aged early 50s) holds a teaching diploma, and teaches in Mceula, while staying in Cala Town. The third son (aged 40s) is working as a medical technician in Queenstown. The first daughter (in her late 50s) is a medical tutor at a hospital in Pretoria. The second daughter (mid-50s) is the principal at a high school in Umtata. The third and fourth daughters work as doctors in UNITRA. Some of the children remit money R 200-500 to Nodumo about four times a year. Nodumo also has 8 cattle and 31 sheep which her late husband originally inherited. In the garden, she plants fruits and vegetables with her grandchildren using a spade. In the field, she hires the tractor at R 500-900 from one of the three owners (ex. case[E]1) in Lower Cala, while planting using their cattle and a planter. They also buy five bags of chemical fertilisers (R 65/bag) to mix it with animal manure. They get 13-14 bags of maize (650-700 kg) in bad years and 50 bags in good years (2500 kg). Two to four bags are enough for family consumption as they also purchase other staple grain such as wheat and pap. They use some maize to feed chicken, and sell the rest to neighbours. They get enough vegetables, but not enough milk and meat. Nodumo thinks that in Lower Cala, if people use their fields, they could grow sufficient food, but most fields are not used, as people have no money.

Case [D] 2: Thembile N...male pensioner-cum livestock owner, without a field, Tiwane

Thembile, a Thembu, was born in 1930 in Sifonondile. He got teaching diploma but initially he could not find a post, so decided to apply through Cala Magistrate for a job in a dairy farm and a registration office in Cape Town. He worked there between 1955 and 1957. Then he applied for the post at a school in Qiba and later became principal. In 1977, as he was not the first born thus had no land to inherit, he decided to move to Tiwane to get a homestead site. As he arrived later than those receiving fields in 1972, he was allocated only a 0.25 ha garden by the headman. He is now retired and a pensioner. His wife (born in 1942, passed away in 2002) was from Lower Cala. They had three sons and three daughters. Thembile tried to educate the children but it was a struggle for them to complete their studies and to find employment. The first son went to a private technikon in Durban and now stays in Cape Town; Thembile is not sure what he is doing there. The second son did not finish the teacher training course and is still looking for jobs around Cala. The last son did not go to school and he helps Thembile at the farming. While two of the daughters are married, the last daughter went to technikon in Queenstown, but did not pass due to illness; she stays at home. Thembile did not inherit livestock but bought some animals and the number has now increased: cattle from 5 to 27, sheep from 8 to 150. He sells some milk to neighbours. While animals are usually taken into common grazing fields in the mountains, Thembile asks field owners to let his cattle graze during winter. He also bought a tractor in 1990 at R 48,000 in Queenstown with his own cash (no loan). This is the only tractor in Tiwane, and Thembile's youngest son helps people in Tiwane plough their arable land. While he does not have a field, he hires the garden of an absent neighbour and a 2.5 ha plot from a 12 ha field owner in Lower Cala. In return, he gives half the produce to the owners. The last son drives his tractor for ploughing, while he employs casual labour to remove weeds and harvest (R 50-100/area). He gets 5-10 bags of maize from a garden and 0-20 bags from the 2 ha plot. He purchases hybrid seeds (R 75/packet) and 3 bags of chemical fertilisers (R 70/bag) to mix with manure. Thembile thinks that ordinary people cannot afford to use hybrid seeds as they cannot be planted without chemical fertilisers. Thembile's uses 1.5-2.5 bags of maize to feed his family and 6.5 bags to feed

chicken and the other animals.

6.4.3: Cases of [E] (Wage/Business & Livestock) Strategy

Cluster [E] was characterised by heads who were either locally employed or running businesses, earning over R 20,000 cash income annually. Sixty per cent of them were male and 20% were widows. They were on average aged at 53.8 years and had 6.5 years of schooling, the most educated among the livelihood strategy clusters. They also hold some livestock and 80% of the households own a field; most of them cultivate their fields.

Case [E] 1: Philgat M... business-cum- livestock owner, with a field, LC

Philgat was born in 1942 in Lower Cala. As the eldest son and a descendant of a Mfengu progressive farmer, he inherited a 0.25 ha garden and a 7 ha field with the titles in the 1960s. He completed Std 10, has never worked in urban areas but has run his parents' SPAZA shop for over 10 years and has a brick-making business. Philgat's wife was born in 1948 and she completed Std 10. They have four sons and two daughters. The eldest son (born in 1968, completed Std 10) is a policeman in Cofimvaba. The second son (1970, Std 10) is working at an airport in Johannesburg probably through his friends' connection. The third son (1972, Std 10) is working in Cape Town but Philgat does not know what he is doing. Some of the sons occasionally remit money. The last son (1981) is in college in Grahamstown. The daughters (1976, 1977) both completed Std 10, and help their parents run the SPAZA. Philgat, as the eldest son, also inherited animals and bought some to increase the stock. Now he owns 3 head of cattle and 51 sheep. He and his wife employ two people to work in the garden and field. They use hybrid maize and chemicals purchased from the Agricultural Cooperation. While they own a tractor, they hire a planter at R 50 for 5 days, and buy 8 bags of chemicals (R 70/bag) and mix them with manure. They get 15 bags of maize (750 kg) in bad years and 45 bags (2,250 kg) in good years, depending on rain, from the garden and the field. Twenty-five bags are enough to feed the family and the animals and if there is surplus, this is sold to neighbours. He sees farming as more important than off-farm activities such as remittance, as he does not want to depend on his children..

Case [E] 2: Nowetu N... business/wage-cum-livestock owner, with a field, TW

Nowetu, born in 1957, got married to a Thembu husband, who was born on a Tiwane farm in 1952. Her father-in-law was allocated a 0.25 garden and a 3 ha field by the headman in 1972 and her husband inherited it in 1993 when his father died. Her husband keeps a title (PTO). After completing Std 6, Nowetu's husband applied a job through TEBA and worked as a taxi driver in a Welkom mine until 1981. He later worked in a factory in Cape Town and as a bus driver in Cofimvaba. Her husband came back to Tiwane voluntarily in 1992, to start a taxi business. He bought a van and transport people on the Tiwane-Cala-Elliot/Engcobo route every day. Income from the taxi depends on the season. During the busy seasons, such as Easter, he earns R 500 for 3 days work, but during slack seasons he can earn little. When the Standard Bank opened a branch office in Cala, this reduced the number of people who needed to go to Elliot (to the bank), reducing his profits. Nowetu has teaching diploma but did not work till 2002. Since 2002, has been teaching at Mceula high school. Nowetu and her husband stay with their twin grown-up

sons (1980, Std 10), two daughters (13, 15), her husband's cousin (65) and a nephew (1980, Std 10). Her husband's cousin, now a pensioner, used to work in a factory in Cape Town, but was retrenched in 1979 and has stayed with them ever since. Nowetu's husband inherited livestock; the number of cattle decreased from 8 to 4 due to red water disease, while the goats increased from 7 to 20. They hire a tractor at R 80 for a garden and R 750 for a field to prepare the soil and use their two cattle for planting, using manure mixed with chemical fertiliser. Nowetu wants to hire a tractor at the optimal time, as this affects yields, but sometimes cannot when the only tractor in Tiwane is busy. Nowetu and her neighbours sometimes cooperate to remove weeds in January. They get 10-15 bags of maize in bad years and 30 bags in good years. They consume 3 bags, keep a bag for the next year and sell the rest to visitors from neighbouring villages. They also plant potatoes, beans and pumpkins in the home garden and in the community garden.

6.4.4: Cases of [C] (Remittance/Casual with Livestock) Strategies

Cluster [C] households had the lowest level of off-farm incomes (R 3,727 on average) from either remittance or casual work; they own some livestock. Ninety-one per cent of these households were headed by males, aged 50.5 years old with 6.3 years of schooling on average. With cluster [A], they are the generations most affected by urban structural unemployment since the 1980s. While those retrenched have found few options but casual jobs in their home villages, the status of those remaining in urban employment is no less secure. They try to purchase livestock while in employment, but once retrenched, they have to sell them for cash.

Case [C] 1: Nosakhele K... retrenched husband with a few livestock, without a field, LC

Nosakhele was born in 1958, completed Std 8, and is married to Mfengu husband, who was born in 1952 in Lower Cala. As her husband was the middle son, he did not have land to inherit. They were allocated a 0.25 ha garden by the headman in 1985. Nosakhele is not sure whether they received a title or PTO. Nosakhele's husband completed Std 8 and applied through TEBA to work for the mines in Priska and Harties. He was retrenched and came back home in 1996, when mine was closed. When her husband was working, he bought some cattle but as some died, they have only two cattle now. Nosakhele sometimes does casual jobs for her mother or neighbours in Lower Cala, i.e. painting walls, cleaning the house, washing, and receives R 100-300 per month. They have two sons and four daughters, all in local schools. In the garden, they hire a tractor at R 60-100 and a planter at R 50, and the owner of the planter does the planting for them with their two cattle. They get 1-2 bags of maize and buy 5-6 more from neighbours for consumption and animal feed.

Case [C] 2: Nokawaka M... retrenched husband with a few livestock, with a field, TW

Nokawaka was born in 1951 in Lupapashi and is married to a man who was born in 1941 in Lapesini. As he was the second son, they decided to come to Tiwane in late 1972 to get arable land. They were allocated a 0.25 ha garden and a 1.5 ha field with PTOs. After completing Std 4, her husband applied through TEBA for a job in a mine, and then at a white farm near Johannesburg through the Magistrate. He came back to Tiwane when he was retrenched in 1985. He now makes a living by cutting grass/bush for firewood, earning R 200 or less per month. A

big bundle sells at R 30. The government used to run a project to employ unemployed people to cutting Lapesi bush, but it no longer operates. Nokawaka and her husband have five children. Their two grown-up sons completed Std 10. The first son stays in Johannesburg looking for work while the second son has never worked but stays at home. They have also another son, two daughters and a nephew staying with them (aged 10-16 years). They purchased some livestock when her husband had an income but some died; only 6 cattle and 26 goats remained. The children take the animals to graze in the mountains. On their arable land, they hire a tractor at R 80 for a garden and R 325 for a field, use two cattle for planting seeds mixed with manure. In the field, their neighbours sometimes help with planting and weeding. They get 10 bags of maize (2 from the garden and 8 from the field), consume 7.5 bags and sell 2.5 bags. They also get 2 bags of beans and vegetables such as potatoes, beans and pumpkins, and are able sell half of them. Milk is enough for family consumption during the summer but not in winter. They also keep some chicken. When the family needs cash, they sell goats and chicken.

Case [C] 3: Nolusapho N... retrenched husband with a few livestock, without a field, TW

Nolusapho was born in 1963 and is married to Thembu husband who was born in 1958. She finished Std 5 and husband Std 3, and they used to work for the white farmer in Ida. They came to Tiwane in 1996 to build a homestead. They were allocated a 0.25 ha garden with a PTO by the headman; although they applied for a field, they did not get one. Her husband worked at a mine near Johannesburg from 1996, but was retrenched once for 3 years, and started to work again for another mine in 2002. He remits R 400-500 per month to Nolusapho. They have three sons (11, 12 and 20) and three daughters (18, 15, 1) staying with Nolusapho. The eldest son never went to school and is unemployed; the other children are in school. They have seven head of cattle. In the garden, Nolusapho hires a tractor at R 80, ploughs with a plough(*gaba*) and plants seeds mixed with manure one by one as she has only a *gaba* but no plough and planter. She also plants potatoes, beans and pumpkins. Nolusapho gets a bag of maize and buys two more from neighbours for consumption. They get enough vegetables and milk for family.

6.4.5: Cases of [A] (Remittance/Casual without Livestock) Strategies

The cluster [A] households were dependent on remittances or casual incomes like the cluster [C] counterparts, while lacking livestock. They were younger (41 years old on average) but less educated (5.2 years of schooling) than those of cluster [C]. 69% of them were headed by male, 8 % by widow, and the rest by single females. Only 31% have a field.

Case [A] 1: Nosolomzi S... livestock-less retrenched, with a field, LC

Nosolomzi was born in Lower Cala in 1947. Her Thembu husband was born in Lower Cala in 1956. As the first boy, he inherited a 0.25 ha garden and a 3 ha field with the title from his father. After completing Std 5, he applied through TEBA for a job and worked in a Welkom mine. After being retrenched, he worked in Ugrha Irrigation Scheme near Cofimbava, but came back to Cala when the Scheme was closed in 1997. He has been unemployed until 2004 when he got a job in the construction of a road with Group 5. Nosolomzi does casual jobs, such as washing clothes for neighbours; her husband's sister gives them R 200 per month. They have four sons (17-23) and a

daughter (22). Nosolomzi's daughter lives with her cousin sister in King William's Town to complete Std 10. They used to plough the field when her husband was working, but now they do not because they do not have money, implements and fences that prevent others' animals from straying into the field to destroy crops. For the garden, they hire a tractor at R 100, two cattle at R 40-50 and a planter at R 30-50 for ploughing and planting. They get two to three bags of maize and buy one more bag to feed animals. As they have no animals, they get manure from neighbours.

Case [A] 2: Xakekile B... livestock-less remittance, without a field, TW

Xakekile, a Thembu, was born in 1954 in Indwe. He is not married. He came here in 1977 with his elder brother to get a homestead site, as they had information on the availability of land in Tiwane from their mother's friend who worked in Indwe. The headman welcomed outsiders seeking sites to stay on, but it was difficult to get a field. Xakekile used to work as a transport labourer in Johannesburg and Cape Town until 2000. He came back voluntarily to stay in the homestead. His brother (born in 1952) completed Std 2 and is working as a truck driver in Cape Town. He sends Xakekile R 300-400 per month. They do not have money to buy livestock. Since 2000, Xakekile ploughs a garden using a hired tractor (R 80) and plants seeds one by one, using a *gaba*. Due to crop failure, he did not harvest enough maize for his own use and had to purchase some.

6.5: Discussions and Concluding Remarks to Livelihood Study

This chapter has revealed outstanding inter-household heterogeneity in livelihood strategies within a small area and the process of social differentiation through personal/familial experiences of accumulations in reaction to macro-social transition. Overall, which particular off-farm income sources the households depend on and whether they own livestock seem to define a livelihood strategy. The five livelihood strategy clusters identified were; [A] remittance/casual only (19% of the total households), [B] pension only (25%), [C] remittance/casual with livestock (16%), [D] pension with livestock (26%) and [E] wage/business with livestock (14%). Below, we interpret and discuss the findings in relation to the assumptions presented earlier in this chapter, i.e. (a) some households have managed to resist disintegration and coped with social changes while others have not, and (b) social differentiation has been affected by personal/familial experiences of accumulation and to macro-level changes, which in turn differ across generations and between the levels of asset endowments.

Cross-cluster comparisons indicate that options of these livelihood strategies have been partly affected by development cycles of households and by structural unemployment in urban areas. The cluster [B] and [D] households were headed by retired old-age pensioners. During their youth, around 1940s-1960s, those heads (or late husbands of the widows) with little formal schooling applied for contract jobs in the Gauteng mines through the TEBA office or in white farms in Cape Town through the Magistrate in Cala. Those who were educated built their careers

through teaching or other professional posts. The cluster [E] households were headed by educated middle-age generations. The educated heads either pursued their careers in education or ran own business locally. Lastly, the cluster [A] and [C] households were headed by younger generations, either migrants or those retrenched. While their parents used to get employment contracts arranged by the state even with lower education levels, they are most affected by the urban structural unemployment which has become more serious since the 1980s.

Even among the same generation, some households have managed to invest in education, accumulate wealth and cultivate arable land to ensure secure rural livelihoods during the hardship of urban structural unemployment, while others have failed. The cluster [D] (pension with livestock) and [E] (wage/business with livestock) households have invested in higher education for their children and in livestock. In contrast, cluster [B] (pension only) households used to invest in livestock to build their homesteads during their youth with the income earned as migrant labour. After retirement, however, they have lost their animals, either because animals died due to diseases or were sold for cash. Cluster [C] (remittance/casual with livestock) households have been willing to invest in livestock if they have remittance income. But once retrenched, these households have no option but to sell animals to complement the little income from casual labour. Finally, cluster [A] (remittance/casual only) households cannot afford to purchase animals.

The examination of life histories has also revealed the social dynamics of house holding, which Bank (2005) claims the ordinary livelihood approach fails to adequately deal with. For example, some households in the mature stage of the development cycle, especially from clusters [B], [D] and [E], consisted of aged parents, grown-up children and grandchildren. While some children left home, parents have supported unemployed children and even grandchildren of absent children with their income. Bank's (2005) claim applies to cluster [B] households (pension only), where children who have sought jobs, often low-skilled informal jobs, in urban areas rarely remit money, and parents rarely know what they are doing. However, some households (such as Case [D]1 and [E]1) have managed to resist to disintegration, by having invested in higher education for their children. While established in urban areas, such children have supported their parents through occasional remittances of money. Established households with livestock, i.e. of clusters [D] (pension with livestock) and [E] are also more likely to maintain crop production at least to feed their families and animals than those without. This is because families without livestock lack the money to hire implements (tractor services) and inputs (fertiliser), the biggest reason for under-farming. But more fundamentally, the widespread practice of tractor cultivation has contributed to the disintegration of cooperative farm work (called *ilima*, ex. McAllister 2001) due to the increasing social differentiation.

Though this is a very small case study, what can we infer from the findings for rural development policy and research directions? First, effective identification of target groups is important, considering diverse interests in and demand for support among rural sub-populations with different levels of assets and activities. The poor are more likely to be identified with less diversified livelihood portfolios, specialised either in casual, remittance or pension for their income source, while owning little livestock wealth. Secondly, to invigorate farming activities through agrarian reforms, emphasis should be placed beyond transferring land, i.e. providing

more comprehensive sets of opportunities to augment assets (education, livestock) and to diversify activities, so that poor have more options to cope with transitions while securing livelihoods. Lastly, as considering diverse interests and skewed distribution of wealth within rural sub-populations, more research is needed to assess the governance of common resources, i.e. how to coordinate better access, conservation and management of grazing land and biodiversity.

Part III

Kenyan Case

Part III: Kenyan Case

Chapter 7: KENYAN BACKGROUND

7.1: Sustainable Development Pathways in Rural Kenya

The Kenyan economy is primarily based on agriculture, while its share of GDP, estimated at 32.4% in 2000 (World Bank Development Indicators Database 2007), has been steadily shrinking to 27% in 2005 due to the increasing significance of services, tourism and industry. Though urban economies have been thriving since its independence, two-thirds of the Kenyan population are still found in rural areas. A large number of poor rural populations have been dependent on mixed crop-livestock farming systems (Thorne 1998; Thorne et al. 2002; Thornton et al. 2002). Diversifying livelihoods into animal production has given security to poor crop farmers facing high climatic risks, because livestock is an asset that can be easily liquidated during emergencies (Ashley and Nanyeenya 2005). However, the rapid population growth, almost tripled since independence, has gradually led to the shrinkage and degradation of land and other natural resources available for extensive arable and grazing activities (Place et al. 2003). With an annual population growth estimated at a rate of 2.4%, the incidence of poverty in rural Kenya appears to have increased between 1992 and 1997, from 46% to 52% of the rural population (Ellis and Freeman 2004).

Poverty reduction must be accompanied by sustainable management of the natural resource base on which poor Kenyans critically depend. One effective option is to promote agricultural intensification through crop-livestock integration, where households use manure for crop production, save crop residue for feed, and use animals for cultivation and transport, to reduce the purchase of external inputs (McIntire et al. 1992; Thorne et al. 2002; Bationo et al. 2004). Within Kenya, with a wide range of diversity in agro-climatic and socio-economic conditions, crop-livestock integration was established with the smallholder farming boom that started in the 1950s in the cooler, agriculturally favoured zones with high population density, such as in highland zones, or areas with good access to markets, infrastructure and development services, such as in central and parts of eastern Kenya (Collier and Lal 1984; Evans and Ngau 1991; Tiffen et al. 1994; Staal et al. 2002; Place et al. 2006).

However, rural development in marginal areas, occupying most of the land area in Kenya, with arid climates and fragile soils was greatly delayed. Until the 1970s and 1980s, agropastoralists survived on produce from extensive crop and livestock activities that were not integrated. But for the past few decades, infrastructural development and education have rapidly transformed the livelihoods of people in arid/semi-arid zones from a subsistence mode to one more involved in the monetary economy, while inducing immigration from already overpopulated high potential areas. The need to earn cash has increased tremendously, but regular off-farm income earning opportunities are scarce and limited to a small number of households in remote areas. Poor

households have therefore resorted to exploiting natural resources to make charcoal for ready cash or to increased use of land using low inputs of capital and labour. This has resulted in the accelerated degradation of the natural vegetation for the whole community.

There is need to ensure sustainable agricultural intensification and economically profitable integration of crop-livestock farming in marginal areas in rural Kenya. Some specialists in African land tenure systems (i.e. the population pressure school discussed in Chapter 2) argue that population pressures induce automatic agricultural intensification and evolution of tenure systems (Bourn and Wint 1994). While land tenure institutions in Kenyan peripheries were left relatively intact by colonial interventions unlike in South African, however, real intensification processes could be more complicated ways, as rural sub-populations may respond heterogeneously to changing circumstances and competition between grazing and cultivating land for heterogeneous rural subpopulations can intensify (McIntire et al. 1992).

Detailed community-level case studies are necessary to adequately address policy concerns about poverty and at the same time, environmental sustainability in Kenyan peripheries. The objectives of Part II are to reveal inter-household heterogeneity in the livelihood/crop-livestock diversification strategies, to investigate their associations with the capital asset endowments and off-farm income activities of households, and to examine their implications on governance and resource management, based on case studies from a Rift Valley community. The rest of this Chapter reviews the political economy of Kenya (Section 7.2), regional diversities in the impacts of de-agrarianisation on sustainable agricultural intensification (Section 7.3), the background of the Rift Valley community and particular research questions for Chapters 8 and 9 (Section 7.4).

7.2: Political Economy of Kenya

This section briefly reviews the political economy of Kenya, especially the development of African smallholding farming in the favoured regions (Collier and Lal 1984; Francis and Hoddinott 1993; Francis 2000; Ellis and Freeman 2004; Freeman et al. 2004).

The colonial history of Kenya dates from the establishment of a German protectorate in Zanzibar in 1885, followed by the arrival of the Imperial British East Africa Company which eventually took over the colony in 1890. During the early part of the 20th century, the interior central highlands, which had been home to indigenous tribes, were settled by British and other European farmers who became wealthy coffee growers. The priority of the colonial state in Kenya was to protect European farmers from competition from African producers and to secure labour for the European farming sector. The state restricted African cultivation of the most valuable export crops and introduced a hut tax, while recruiting the landless to European farms.

However, during the Depression and again in the Second World War, the state, with a pressing need to earn foreign exchange, paid more attention to partially promoting commodity production

by African farmers, while restricting their accumulation to secure an adequate supply of labour for European farms. These regulations fuelled the explosive growth of African nationalism. From 1952 to 1959, Kenya was under a state of emergency due to the rebellion against British rule. In response, the colonial state first attempted to create a small class of African loyalist farmers. The 1954 Swynnerton Plan was intended to provide freehold land tenure to a small number of progressive Africans and the selective loosening of restrictions on African cultivation of high value commodities such as coffee and tea, and dairy farming. By the late 1950s, however, the maintenance of a heavily subsidised European farming sector was not considered vital by the British state. They opted to negotiate a peaceful transfer of political power while preserving the basic structure of the economy.

Kenyatta became Kenya's first prime minister in 1963 and then president in 1964 when Kenya became a republic. In 1978 president Moi took power after Kenyatta died. Under Kenyatta and Moi, Kenya pursued an apparently market-oriented approach to development. The most important reforms after independence were the transfer of a large proportion of the European farm land to a group of African accumulators and the division of the remainder among smallholders in settlement schemes, as a means of reducing conflict over the distribution of land. Where land reforms were implemented, land was sold as private property to people whose purchases were usually financed by government loans. Beneficiaries in the favoured smallholder regions responded rapidly to the new market opportunities brought about by the abolition of growing restrictions, and there was a dramatic increase in smallholder commodity production between the 1960s and 1980s. In contrast, large-scale agriculture ran into serious difficulties as early as the 1960s.

Between 1964 and 1971 the economy grew at the annual rate of 6.5% on average. The oil shocks and other external factors slowed down the growth in the early 1970s, but thanks to the coffee boom in 1976 and 1977, the economy recovered in the 1980s. However, in 1989 growth started to decline as a result of poor weather, regional conflict and an influx of refugees, a global recession that lowered demand for Kenya's traditional export, and political uncertainty. After years of economic stagnation, in 1993, the government implemented a reform programme of economic liberalisation under the guidance of the World Bank, IMF and other donors. The economy recovered temporarily in 1995-1996 but slowed down again in 1997-1999. A new economic team was put in place in 1999 to revitalise the reform effort, strengthen the civil service and curb corruption. However, wary donors continued to question the government's commitment to sound economic policy. In 2002, Moi was finally constitutionally barred from running in the presidential election, and Kibaki, running for the opposition coalition, was elected president.

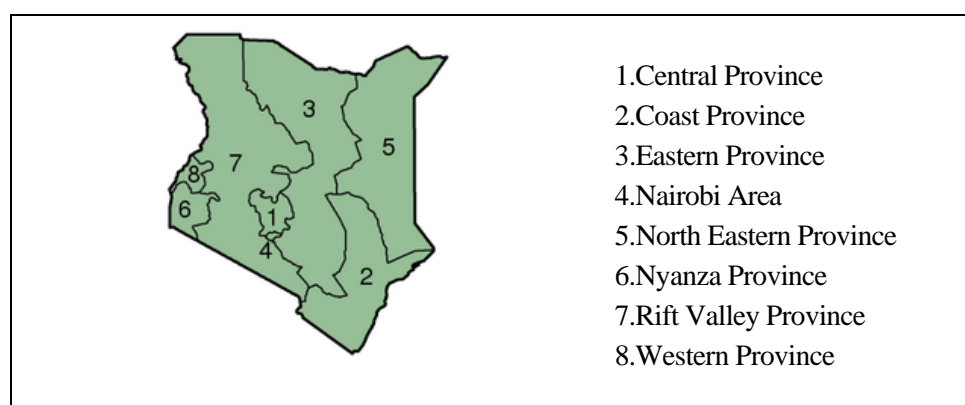
7.3: Divergent Development Pathways across Regions

The previous section briefly reviewed the growth in smallholder farming in Kenya. The boom, however, was largely confined to high potential areas for cash crops in terms of altitude, rainfall,

and access to market and infrastructure, while the rest of the country lost out. Indeed, Kenya's diverse biophysical conditions and socio-economic environments resulted in divergent development pathways across regions (Kristjanson et al. 2005; Place et al. 2006; Okwi et al. 2007).

Kenya's land rises gradually westward from a narrow coastal plain in a series of plateaus, culminating in a highland area that is bisected by the Great Rift Valley. Due to a combination of meteorological and topographic factors, only about one-seventh of Kenya's land area receives reliable yearly rainfall. For example, Nairobi area, the capital city with its suburb, and the south-western parts of the Rift Valley, Western and Nyanza provinces (Figure 7.1) are temperate and humid despite being located near the equator, as they are situated at altitudes of 1,700 m or more above sea level. In turn, the central and northern plains and plateaus of the Central and Rift Valley provinces at lower altitudes (1,000 m or below) are semi-arid; their populations depend on unpredictable rainfall for subsistence mixed farming. The northern areas of the Rift Valley, Eastern and North Eastern provinces consist mainly of arid plains peopled by semi-nomadic pastoralists.

Figure 7.1: Provinces of Kenya



Interestingly, not only agro-ecological conditions but other socio-economic factors can substantially affect development pathways. For example, southern parts of Eastern Province, although it is largely semi-arid, have been the most favoured beneficiary of investment in infrastructure and rural-urban linkages due to its proximity to Nairobi (Collier and Lal 1984; Evans and Ngau 1991; Tiffen et al. 1994; Conelly 19980; Francis 2000; Zaal and Oostendorp 2002). According to Tiffen et al. (1994), Machakos District in Eastern Province was seen as a 'problem area' with seriously overgrazed land and frequent famines during the 1930s and 1950s. But it achieved a remarkable recovery from environmental stress by the 1980s, as farmers have accommodated their farming practices and livelihood strategies to population growth by re-investing off-farm incomes into intensive farming technologies and soil conservation practices. Other studies (Evans and Ngau (1991) in central Kenya; Freeman et al. (2004) and Freeman and Ellis (2005) in south-western Kenya; and Tittonell et al. (2005) in western Kenya) also support the idea that diversification into high-return off-farm activities enables households to undertake high-return farming activities and to invest in good resource management practices.

These findings may imply that de-agrarianisation has promoted agricultural intensification in rural Kenya. Evans and Ngau (1991) argue that off-farm income provides households with a form of insurance against the risks of farming, and thus enables the households to adopt new production methods and raise output. Otherwise, a household that engages solely in farming is going to be much more cautious about adopting innovations or making other changes affecting production than another household which derives only part of its income from farming and can turn to other sources of earnings when necessary.

In contrast, Francis and Hoddinott (1993) and Francis (2000) argue against the applicability of the success stories of Central Kenya to peripheries with little access to markets for agricultural products. They present results from two remote villages in western Kenya showing that migrant remittance has promoted investment in education and precluded significant investment in agricultural intensification rather than promoted it, due to very limited ability to access urban markets. They in turn stress the impacts of de-agrarianisation, with differential accesses to education and better-paid employment among rural sub-populations, on the increasing social differentiation.

It is therefore indicated, in empirical application, not only that development pathways in a particular location should be analysed in relation to agro-ecological and socio-economic conditions but also that the impacts of de-agrarianisation on local processes of social differentiations from micro-level perspectives.

7.4: Changing Agro-Pastoral Livelihoods in the Rift Valley

In comparison to other regions in Kenya, little research has been done on rural poverty and environmental issues in arid/semi-arid zones in the Rift Valley Province. This province is one of the largest provinces in Kenya, consisting of 18 districts, and has quite unique geographical features. The great escarpment cuts the province from the south to the north, dividing the areas between highlands and lowlands. While the highlands provide adequate rainfall for agriculture, the low altitude zones are either arid or semi-arid (Okwi et al.2007).

The people of the Rift valley are mostly rural and consist of different tribes, including the Kalenjin and the Maasai. They are traditionally pastoralists and are believed to have migrated to their present Rift Valley location from the Sudan 2000 years ago. The Kalenjin is an ethnic group of Nilotic origin. There are several smaller tribal groupings within the Kalenjin. For example, one of the Kalenjin sub-tribes, the Keiyo, moved away from the eastern grazing lands of the Rift Valley during the expansion of the Maasai tribe to the southern parts of the great escarpment, the present Keiyo District. The loss of grazing lands forced them to reduce their herds and rely more on agriculture. These days, the Keiyo subsist on grain and the milk and meat provided by their cattle, sheep and goats.

By the 1970s, development in the Rift Valley was confined to residents in the highlands, with better access to markets in the neighbouring white highlands. Severe agro-ecological conditions defined the subsistence mode of livelihoods for residents in the arid lowlands. In recent years, however, in the face of increasing pressure in the highlands and in response to infrastructural development in the lowlands, more people have migrated into marginal areas in search for land. Rapid demographic and socio-economic changes have driven changes in livelihoods and land use patterns, which in turn led to degradation of natural resources. Agricultural planners have been obliged to turn their attention to the far more difficult task of developing the arid, marginal land.

The next two chapters attempt to document changing livelihoods and land and resource use patterns in a Rift Valley agropastoral community in response to increasing population pressures and a pressing need to agricultural intensification. Households are observed to adopt heterogeneous portfolios of crop-livestock types and off-farm activities with different economic returns, i.e. subsistence vs. commercial. Diversity in livelihood/crop-livelihood diversification strategies among households within a small area indicates that determining factors of agricultural intensification and proper resource management are not only biophysical but also socio-economic. Furthermore, the close associations between resource management and crop-livestock activities as well as diversification into particular off-farm income activities are acknowledged. This may be because investments in resource management are not made in isolation with the preceding investment in crop and livestock activities and with the availability of capital (Barrett et al. 2002; Staal et al. 2002; Bationo et al. 2004).

To devise effective targeting for intervention and to facilitate the analysis on social differentiation and diverse reactions to pressing needs on agricultural intensification, I attempt to identify representative household types following similar livelihood diversification/resource use strategies. In dealing with the quantitative data with multiple variables on distinctive crop and animal varieties in the analyses, multivariate analytical tools are used wherever they are found to be useful. Chapter 8 develops distinctive livelihood diversification strategies, defined as a portfolio of sub-categories of crop, livestock and off-farm activities with different economic returns and resource management incentives, and examines the implications of diversification into off-farm income activities and increasing social differentiation on governance of common natural resources. Chapter 9 more closely investigates factors affecting the adoption of more commercial and intensive crop-livestock farming technologies, by examining the relations between the effects of capital-asset endowments as well as access to off-farm incomes and the adoption of particular crop-livestock diversification portfolios with various soil management levels.

Part III: Kenyan Case

Chapter 8: LIVELIHOOD DIVERSIFICATION STRATEGIES, INCOMES, AND SOIL MANAGEMENT IN KERIO RIVER BASIN¹

8.1: Introduction

In the discussion on targeting of development interventions in the East Africa there is an ongoing debate on the usefulness of geographic targeting versus targeting of specific household types (Kruseman et al. 2006). To test this debate, some recent empirical studies have investigated heterogeneities in livelihood strategies across regions, their association with resource management technologies, as well as with the effects of agro-ecological factors, population, and market conditions (Staal et al. 2002; Pender et al. 2004a; Kristjanson et al. 2005; Place et al. 2006; Kruseman et al. 2006; Okwi et al. 2007). The underlying theme is that natural and physical assets, i.e., agricultural/soil conditions and market/infrastructural access, are key factors that determine livelihood options available to households in relative to household-specific human and financial capital assets. It is suggested that if diversity between villages is more important compared to heterogeneity amongst households, geographical targeting can be considered as an effective strategy for selectively enhancing a process of agricultural intensification (Kruseman et al. 2006).

On the other hand, heterogeneities in livelihood diversification strategies among households sharing similar biophysical conditions and their implications for sustainable natural resource management have rarely been empirically investigated. Detailed community-level case studies are nevertheless needed in order to more adequately address policy concerns for the following two reasons.

First, I would like to know what the effects of households' human and financial capital asset levels are with respect to the adoption of relatively high-return, sustainable agricultural activities. A few micro-level studies have revealed that households pursuing highly diverse income diversification strategies, usually including off-farm options, are more likely to take up new farming technologies. These households are relatively well endowed with respect to education and skills (Evans and Ngau 1991). This implies that for poverty alleviation, meso-/macro-level development policies need to be multi-sectoral, encompassing education and farm as well as off-farm activities.

¹ This chapter is a modified version of Iiyama et al. (2008), 'Livelihood Diversification Strategies, Incomes and Soil Management Strategies: A Case Study from Kerio Valley, Kenya,' *Journal of International Development*, 20: 380-397, as well as of Iiyama (2006a) ILRI LUCID Project Working Papers 51.

Second, research at the community-level has often revealed skewed access to, and dependence on, communal natural resources among community members (Abbot 2005). Relative to higher income households, lower income groups are more likely to exploit natural resources for survival while rarely undertaking their management. Such unsustainable practices are likely to degrade the resource base of the whole community. These findings suggest that policies aimed at enhancing the diversity and profitability of livelihood portfolios of the poor as well as at augmenting their capital asset bases may be more effective than efforts solely focused upon restricting access to common resources as is often the case.

Given the wide variation in assets held by rural households across most rural African communities (Jayne et al. 2003), it is useful to develop criteria for categorising households into groups with similar asset bases, welfare status and natural resource management objectives. The appropriateness of one criterion versus another is debatable, while cost-effective means of capturing the livelihood strategies of the poor is required to good policy design (Ellis 2000). Development agencies have tended to use agricultural resource endowment as a major criterion, but this has resulted in poor categorisation as the relative importance of off-farm income activities continues to increase (Reardon 1997; Barrett et al. 2001a; Bryceson 2002; Titttonell et al. 2005). While a household's asset base substantially affects its capacity and willingness to invest in agricultural resources (Kristjanson et al. 2005), even households with similar resource endowments demand different technologies because of differences in preferences, objectives, constraints and incentives attached to certain livelihood activities (Barrett et al. 2002; Place et al. 2002a; 2002b). Thus a range of observable on-farm and off-farm activities needs to be taken into account when categorising households.

In this Chapter, I develop an approach for categorising households into important livelihood strategies being pursued in a fairly typical Kenyan mixed crop-livestock farming community located in the Rift Valley. It is aimed at practical policy formulation as it identifies similar groups of households that can be targeted with appropriate interventions and local policies and actions aimed at alleviating the root causes of poverty and unsustainable natural resource management practices. I identify livelihood diversification strategies of households and link them with welfare status and adoption of soil management practices.

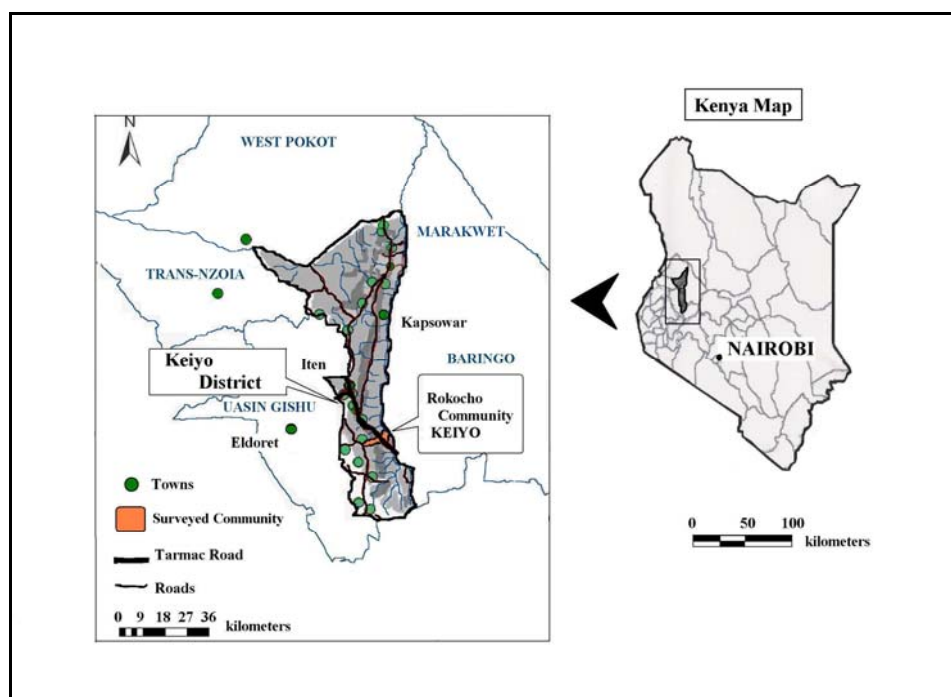
Section 8.2 describes the background and changing livelihoods of the study area, located in Rift Valley. Section 8.3 explains the definitions of and criteria for livelihood diversification patterns, assumptions and analytical methods. Section 8.4 presents the results of the analyses and Section 8.5 discusses policy implications derived from the findings.

8.2: Changing Livelihoods in Kerio Valley

8.2.1: Background of the Kerio Valley

The study area is located along the Kerio Valley in Keiyo District in the Rift Valley Province of western Kenya (Figure 8.1). Keiyo District borders Uasin Gishu and Trans-Nzoia to the west and West Pokot to the north and Baringo District to the east (Figure 8.1). Kerio (Endo) river that originates near the equator and flows northward into Lake Turkana corresponds to the eastern border between Keiyo and Baringo Districts.

Figure 8.1: Map of the Study Area



Keiyo District can be roughly subdivided into three agro-ecological zones – the highlands (altitude 2,500–3,000 m) to the west, the escarpment (1,300–2,500 m) in the central region, and the lowland or valley floor to the east (1,000–1,300 m) (Muchemi et al. 2002).

Its main residents, the Keiyo are a Kalenjin sub-tribe and have subsisted on grain and the milk and meat provided by their cattle, sheep and goats. The Keiyo are further sub-divided into 16 distinctive patrilineal clans and then sub-clans. The land and resources have been customarily owned by each clan/sub-clan that has inhabited a strip of land, from highlands in the west to valley floor in the east. Clan/sub-clan members thus share water catchments, forests, lands, seasonal streams that dry up in the mid-escarpment during dry seasons and other resources across the three agro-ecological zones. While use of most common natural resources has been sanctioned by the consultations with the elders, clan/sub-clan land has long been sub-divided among extended families, and further demarcated into parcels owned by nuclear families. Thus even informally, individualisation of land has been taking place for long times, and a clan member settling on the highland has often claimed its rights to plots on the escarpment and the valley floor, even without cultivating them (Iiyama 2006a; Iiyama 2006b).

The highland has always been exposed to market opportunities due to its proximity to Eldoret town, a regional market centre, in Uasin Gishu District, which used to be the “white highlands” where Keiyo people sought employment on the farms until the 1960s and 1970s. In contrast, until the early 1970s, it was considered unviable to do farming in the valley floor because of no permanent sources of water and because of high insecurities due to frequent conflicts and cattle rustling between the Keiyo and the neighbouring Tugen, who have resided on the eastern side of Kerio River Basin in Baringo District.

8.2.2: Development of the Valley Floor and Changing Livelihoods

This study focuses on households representing part of the valley floor community. As there is few reliable official records available on developmental events that have occurred in the valley floor, the following descriptions are primarily based on the information that was provided by local informants (Iiyama 2006a; Iiyama 2006b).

During the 1930s and 1940s, the access to water was a crucial factor for villagers to decide their homestead sites. More clan/sub-clan members were resided in the highland or the escarpment, while some resided in upper parts of the valley near springs in the escarpment, but few people did in lower parts of the valley floor without lack of permanent sources of water and securities. Whenever severe famines broke out in the Kerio Valley in response to serious natural disasters such as drought and cattle disease, people in the escarpment and upper parts of the valley had to seek for temporal refuges to their relatives in the highland for water and shelter.

When the British colonial officials arrived in Kerio Valley around the 1950s to establish the Magistrate, they introduced the vaccination for livestock and opened mobile clinics, missionaries, and schools, which brought about a tremendous social change to the livelihoods of the population in the valley. Yet, even in 1963, at the year of Kenyan independence, people suffered from a severe drought and some families were forced to seek temporal employment on commercial farms in the white highlands in Uasin Gishu District to the west of Keiyo. In 1963-1965, immediately after the independence, the government announced its scheme to redistribute farms in the white highlands not only to the rich but also to the poor very cheaply. Then a few Keiyo farm workers benefited from land redistribution to acquire fertile plots suitable for growing high-value crops, such as wheat and vegetables, in the white highlands. The government also implemented the formalisation of plots in the Keiyo highland, which had been initially under customary possession while informally individualised, by registering them with title deeds.

By the 1970s, the Keiyo highland was heavily populated. Many individuals could no longer inherit plots as sub-divided plots became too small to be farther demarcated into multiple male hairs under the practice of sub-division. Then people slowly started to migrate from the highland with high agricultural potentials to settle in the valley. By the time, the security conditions of the basin improved. People initially expanded extensive grazing of a large number of indigenous animals, especially goats, in lower parts of the valley and slash-and-burn farming of drought-resistant crops, such as sorghum and millet. As a result of overgrazing, the soils in lower

parts of the valley were seriously eroded and degraded.

On the other hand, infrastructural and educational developments in the valley gradually transformed the livelihoods of the inhabitants. Education changed the consumption patterns and substantially increased cash demand to pay for school fees. It became increasingly necessary for the households to shift from subsistence to more commercial farm activities, without environmental costs. The construction of a tarmac road in the mid-1980s further led to the exposure of the Kerio Valley inhabitants to larger political economy. The arrival of non-governmental organisations (NGOs) stimulated development by providing villagers with training and capital for horticulture and exotic livestock breeds. The piped water projects further ensured the adoption of intensive agricultural technologies in the valley.

Today, some people in the valley floor grow high value crops such as mangoes and bananas along with staple grain, and practise zero-/semi-zero grazing with the introduction of exotic/crossbreed animal breeds. Among them, progressive individuals can bring and market their horticulture products by themselves at Eldoret market in Uasin Gishu District, while many sell fruits to middlemen(-women) who regularly visit the valley floor from Eldoret to buy sacks of fruits at discounted prices. On the other hand, however, some conservative populations maintain the subsistence mode of livelihoods, or even survive by exploiting common natural resource, such as felling trees for charcoal making, if owning neither livestock nor farming implements. Development in the valley has been accompanied with increasing social differentiation, i.e., heterogeneous livelihood strategies and resource use patterns among sub-populations.

8.2.3: Rokocho Sub-Location

Keiyo District consists of 16 sub-locations, with each occupied by a different clan. Rokocho sub-location in Kibargoi location was randomly selected for this study. Rokocho sub-location consists of 177 households and of Kamelgoi, Kakibii and Kamugul villages (Figure 8.2). Currently, a major tarmac road traverses the sub-location in a north-south direction along which a Christian mission (African Inland Church: AIC) with a training centre, a honey processing facility (of Kerio Valley Development Agency: KVDA), and a primary school, are located. The valley floor is warm for most of the year, with temperatures varying between 22°C and 31°C. Average annual rainfall ranges between 700 and 1,000 mm (SARDEP, 2002). On-farm and off-farm activities are both important livelihood activities in Rokocho sub-location as in other areas in western Kenya (Freeman et al. 2004; Tittonell et al. 2005).

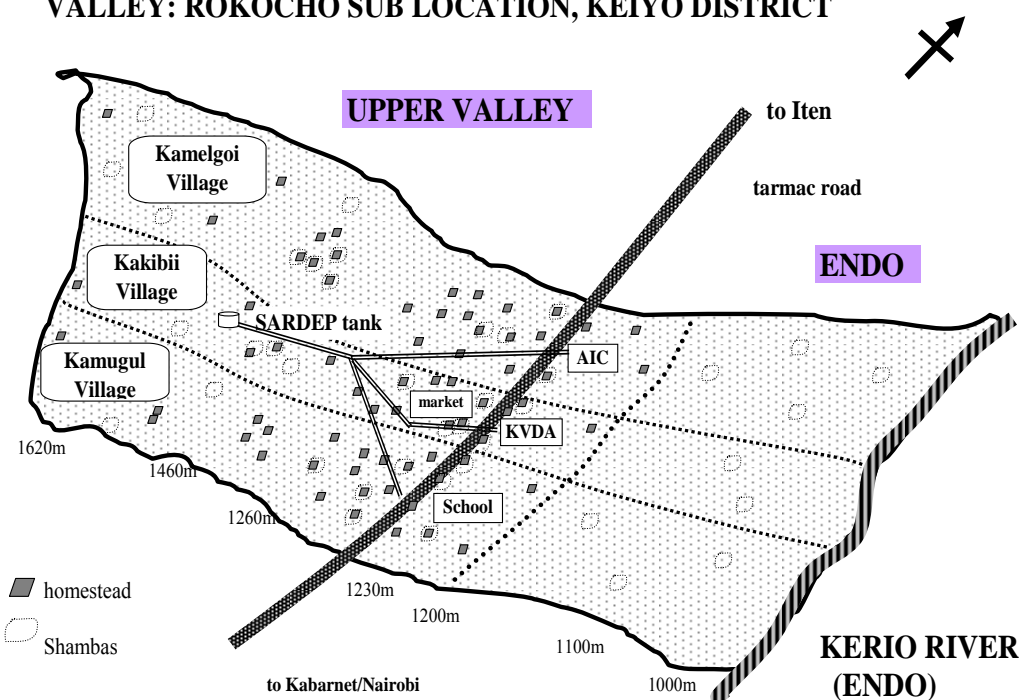
Infrastructural and educational development in the 1980s accelerated immigration to Rokocho and population growth. The trend was enhanced by the construction of the AIC and its pipeline system in 1986, the construction of a community water tank by the Dutch development agency in the late 1990s, and with the training by the World Vision. Fruits were introduced by the AIC in 1986 and initially adopted by a few individuals in Kamelgoi village. The AIC has also recommended villagers to introduce intensive management of exotic animals, such as dairy cattle and goats, instead of indigenous goats whose overgrazing has been regarded as a major cause of

land degradation in the valley floor. Today, on-farm activities include grain production (maize, beans, and sorghum), horticulture, and livestock (indigenous, exotic). Off-farm activities include regular (formal employment and small business) and casual (charcoal making) activities, while remittance is less a dominant source of income in the study area today, unlike similar case studies in western Kenya by Francis and Hoddinott (1993) and Francis (2000).

Today, most Rokocho residents reside in upper parts of the valley, near the tarmac road. The land in each of the three villages has been primarily inhabited by each of the sub-clans for generations: Kamelgoi land by Kamelgoi sub-clan, Kakibii land by Kakibii sub-clan, Kamugul land by Kamugul sub-clan. As indicated with the dotted line in Figure 8.2, the Rokocho residents have distinguished land with moderate slopes in the upper valley from relatively flat land in the lower valley. While more thoroughly examined in Chapter 9, I briefly describe differences in land use patterns between the upper valley and lower valley below.

Figure 8.2: Valley community, Rokocho sub-location

VALLEY: ROKOCHO SUB LOCATION, KEIYO DISTRICT



The upper valley land had been demarcated and sub-divided for each of the extended families of the each Rokocho sub-clan even before the 1930s. Boundaries of individual plots have been marked with beacons and respected by the sub-clan members while sanctioned by the sub-clan elders (the saying goes, for example, if you were to remove the beacons, you shall die). Yet, without proper fences, people could graze animals on lands claimed by other families. After 1978-1981, when the small Rokocho market centre was founded, a few villagers residing along the road, which was later tarred in 1985, started adopting more intensive farming methods and started fencing their individual plots for exclusive use to prevent others' livestock from destroying their crops. Today, a quite a few

homestead plots in the upper valley along the tarmac road were planted with fruit trees and fenced with barbed wire or live (planted vegetation) fences.

In contrast, the land in the lower valley, locally called 'Endo' as named after Kerio (Endo) river, had not been demarcated and remained an open pastureland. After the 1970s when more people came to settle in the valley, the Endo land provided grazing areas for indigenous animals. During the 1970s the government temporarily encouraged people to plant cotton, whose boom however ended shortly, and hybrid maize in the basin. As people started planting, the need to demarcate the commonage into individual plots arose. In 1978, the sub-clan elders decided to sub-divide Endo land and distribute plots to each household. At the time, many Rokocho members were absent in the valley as they worked in the white highlands, thus relatively a small number of families present in the valley could get a proportionally large share of the Endo land. For example, in Kakibii village, the Endo land was initially demarcated into ten Kakibii families on a first-come/first-served basis. Today, people plant maize, groundnuts, sorghum, millet as well as exotic varieties, such as green grams on plots. Yet as most plots remain unfenced, livestock animals are grazed in the Endo land.

These days, in response to development and the introduction of cash crops in the valley, land transactions have increased even under the customary tenure system. Not only Rokocho members but also a few non-Rokocho or non-Keiyo households migrated from other sub-locations/Districts into the Rokocho sub-location to purchase or rent plots, especially those along the tarmac road in the upper valley. This indicates that the Rokocho customary system has been flexible and even non-clan/sub-clan members have not been excluded from transactions, provided that they follow the customary rules regulating access to community resources. Rather, serious governance problems have arisen recently, as poorer households who can not afford to undertake productive farming exploit indigenous trees for firewood and charcoal on unfenced sections in the village, threatening natural resource bases for the whole community.

In the following analyses, it is necessary to highlight the factors differentiating the capacity of households in adopting new livelihood options and the responsiveness to developmental opportunities. To do so, census survey covering all 177 Rokocho households was carried out.

8.3: Methods

8.3.1: Criteria and Assumptions on Livelihood Diversification Strategies

Even within a small area, households can pursue heterogeneous livelihood diversification strategies. Some may depend virtually solely on crops (often only maize and beans), or mostly on livestock, while others grow crops, have goats and a dairy cow, plus grow fruit and have some off-farm income. I define livelihood diversification strategies as combinations of livelihood activities which contribute to income. Dominant livelihood activities can be further classified into sub-groups with different economic returns and resource management incentives.

In identifying target groups, agricultural resource endowment is not a sufficient criterion to categorise households into groups with similar welfare status and engagement in soil management, since most rural households derive a substantial amount of income from off-farm activities (Bryceson 2002; Barrett et al. 2001a; Freeman et al. 2004; Freeman and Ellis 2005). Some researchers use both resource endowment variables and proxies for degree of income diversification. For example, Evans and Ngau (1991) use non-farm revenue, the number of income sources, and livestock asset values separately as proxies for income diversification. Tiftonell et al.(2005) first attempted to categorise households solely based on resource endowments (land, labour, livestock), but as this resulted in poor categorisation, they added other variables, such as production orientation (self-consumption vs. market orientation), main constraints faced (capital, land or labour), position in farm cycle (age of the head, family size) and main source of income.

These criteria are comprehensive but too complicated to be readily applicable for identification of target groups without the use of extensive surveys. Instead, I propose that how a household derives income from a combination of observable activities, i.e. sub-groups of crop, livestock, and off-farm activities, with different economic returns and management incentives, is a simpler approach for grouping households pursuing similar livelihood diversification strategies.

At the same time, capital asset endowments of households will also affect their choice of livelihood diversification strategy (Reardon and Vosti 1995). Within a small area, it is probable that households are relatively homogenous in terms of natural (rainfall, temperature, vegetation) and physical (infrastructure, markets) capital asset endowments. On the other hand, they will be highly heterogeneous in terms of human (labour, skill, knowledge) and financial (land, livestock)² capital asset endowments. Indeed, Freeman and Ellis (2005) found that poorer households lacking in education and specialised skills are compelled to diversify into low return livelihood diversification strategies in farm and off-farm activities.

Access to social institutions and kinship networks, or social capital asset endowments, also define the constraints and options of households. While much of the social capital literature acknowledges that local elites are better positioned with respect to social capital (Ellis 1998; Ellis 2000), it is difficult for outsiders to measure or interpret differential access to implicit social capital assets between households before intensive surveys. In this study, I examine whether a household's choice of adopting a particular livelihood diversification strategy is influenced by their human and financial capital asset endowments, assuming they are relatively homogeneous with respect to natural and physical capital assets, while the implications of differential social capital asset endowments are undetermined.

I then explore whether a household's choice of livelihood diversification strategy helps explain

² While land (or its soil fertility) is often considered as one of natural capital assets, I treat land holdings of a household (whether it owns, hires or borrows), as one of financial capital assets, together with livestock. While the land tenure system in the study area has been customary in that plots have never been registered with formal title deeds, there have been occasional transactions of plots or land can be liquidated.

whether they undertake soil management practices such as terracing and mulching. Engagement in market-oriented farming activities may be more associated with intensive soil management practices than engagement in subsistence farming activities, as the former gives households incentives to invest in maintaining the resource base from which they derive income flows. Engagement in off-farm income activities should also substantially influence household investment in resource management (De Jager et al. 2001; Place et al. 2002; Tiftonell et al. 2005). Cash flows from off-farm income activities allow households to invest in capital-intensive technology but limit the time allocated to such investment (Morera and Gladwin 2006). At the same time, the physical characteristics of plots or land that households can access, such as slope and soil type, also affect choices households make in adopting resource management measures (Freeman and Coe 2002; Place et al. 2002; Clay et al. 2002; Herrero et al. 2007).

8.3.2: Research Methods and Data Processing

The household survey was conducted between July and September 2006 and consisted of administering a structured questionnaire to all 177 households in the community. The questionnaire was designed to collect variables capturing income-earning activities, household characteristics, soil management practices including mulching and terracing, and physical characteristics of the farmland (slopes and soil types) accessible to households.

Major income-earning activities include:

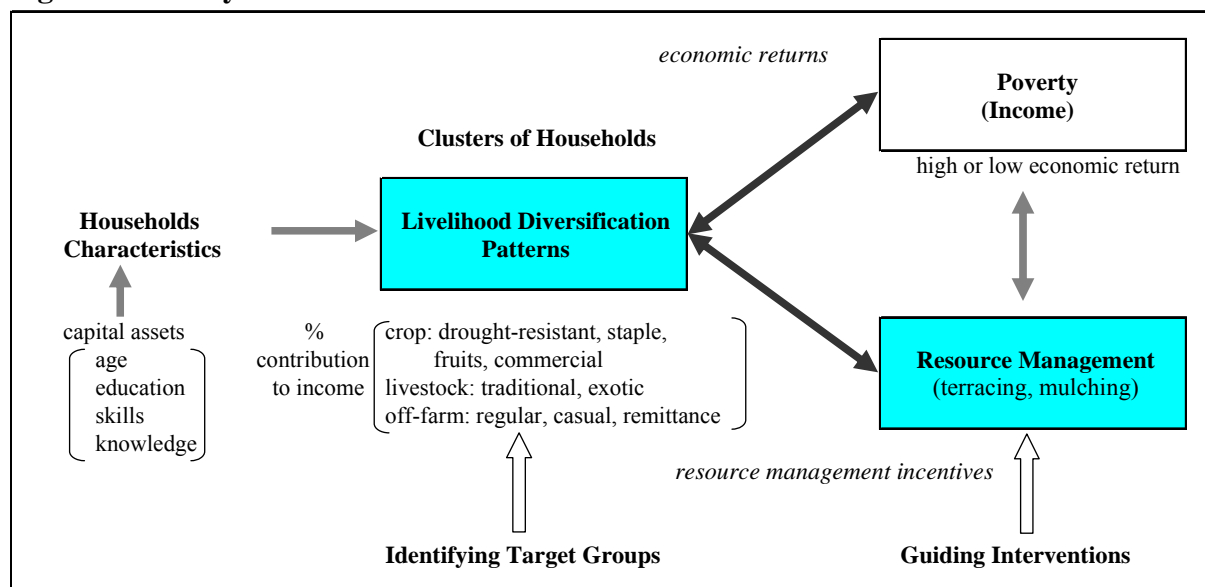
- Crop: drought-resistant (sorghum, millet), staple (maize, beans, green grams), fruits (pawpaws, mangoes, bananas, citrus), commercial (wheat, vegetables, etc.)
- Livestock: traditional (indigenous cattle, sheep, goats) or exotic (improved cattle, dairy goats)
- Off-farm: regular (business, formal), casual (charcoal making, day labour), remittance

In the study area, plots were located either on lower or upper parts of valleys, on escarpments or highlands. These locations indicate physical characteristics of farms:

- Lower valley: flat and dry with sandy soils, ideal for staple and drought-resistant crops; livestock graze freely in open areas
- Upper valley: homesteads are located here on relatively flat to moderately sloped land with sandy and clayey soils; horticulture is currently practised here
- Escarpment: very steep, but staple or drought-resistant crops are cultivated there
- Highlands: moderately sloped, cool with sufficient precipitation, ideal for commercial crops

8.3.3: Analytical Steps

The conceptual framework applied in this analysis is illustrated in Figure 8.3.

Figure 8.3: Analytical Framework

First, the 177 households were classified into groups pursuing similar livelihood strategies. While livelihoods include not only cash earnings of a household, but also food produced and consumed at home (Ashley and Carney 1999; Ellis 2000), I focus here on the income-earning aspects of livelihood diversification strategies, following the approach of Freeman and Ellis (2005). They developed typologies of household livelihood strategies based on sub-categories of income earning activities (on-farm or off-farm, high-return or low-return). As income from crop and livestock sales arises out of the produce not consumed at home, households earning income have generally already met their home consumption requirements³. Therefore, income portfolios also reflect home consumption aspects. In this study, the percentage contribution towards total cash income from each sub-category of livelihood activities⁴ was used to group households with similar sets of income-earning activities by employing a cluster analysis (Everitt and Dunn 2001). This approach helps treat heterogeneous households in different ways in terms of understanding the strategies they are pursuing, which will in turn inform more targeted interventions aimed at

³ Freeman and Ellis (2005) looked at the ratio of home consumption per selected crop and livestock type (such as maize, sorghum, millet, beans and livestock in general). As most crops were found with high shares of the produce consumed at home, sub-categories of income earning activities from farming were treated as low-return livelihood activities. In our study area, the home-consumption ratios are very different among sub-categories of crop and livestock production. For example, the self-consumption ratios for crops (the value of crops consumed divided by the total value produced) are 0.80 for drought-resistant crops, 0.46 for staple crops, 0.11 for fruits, and 0.10 for commercial crops. Most milk from indigenous cattle is consumed at home as the production is very little (0.90 liters per day) while half of the milk of exotic cattle is consumed at home with the rest sold (produced 2.6 liters per day on average)(Iiyama 2006b).

⁴ In calculating 'incomes' from farming activities, gross revenues from crops or livestock products sold were estimated. Crop incomes were measured in terms of the cash value of produce sold or gross revenue, rather than the imputed value of all produce including the unsold part retained for home consumption (see the previous footnote and Iiyama 2006b) as done by Evans and Ngau (1991). Livestock income was the sum of the cash value of animals sold and the cash value of milk sold. Since I was calculating "gross" rather than "net" incomes, costs for crop and livestock activities (labour, purchasing) were not subtracted, since it was difficult to estimate the labour and input costs incurred to earn off-farm incomes (regular, casual, or remittance), which should be treated equally with on-farm income earning activities.

enhancing returns to these different livelihood strategies (Solano et al. 2001; Kristjanson et al. 2002; Rischkowsky et al. 2006).

Secondly I examined the socio-economic characteristics of households in each cluster by comparing means of the variables representing household characteristics (age and education levels of the household head, participation in farmers groups, distance from the homestead to a training centre, family size), land size, number of livestock and number of off-farm income activities that serve as proxies for household's human and financial capital asset endowments. Thirdly, I used logistic regression to determine if and how these different livelihood diversification strategies and physical land characteristics influence the soil management measures being implemented.

8.4: Results of Analysis

8.4.1: Dominant Livelihood Diversification Strategies

Cluster analysis was performed using variables representing the percentage contribution to total income coming from crops (drought-resistant, staple, fruits, commercial), livestock (traditional, exotic), off-farm sources (regular, casual, remittance) and land rent. Five clusters or dominant livelihood diversification strategies were identified (Table 8.1).

Cluster [1] can be described as 'specialisation in casual off-farm activities'. Sixty-one, or 34% of the households belong to this cluster. On average, their annual gross income is Ksh 36,957⁵ (Ksh 3,000 or roughly U.S.\$43 per month). Over three quarters (78%) of their total gross income comes from casual off-farm earnings (Ksh 26,589 or Ksh 2,200/month), 8% from traditional livestock, and 5–6% from staple crop and fruits. Their main sources of off-farm income are charcoal burning (Ksh 200/bag, 10–12 bags per month) and casual labour (Ksh 100/day).

Cluster [2] can be characterised as 'specialisation in traditional livestock'. Twenty-one, or 12% of the households fall in this cluster. On average, their annual gross income is Ksh 47,625 (Ksh 4,000/month or U.S. \$57 per month). They derive 73% of their total gross income from traditional livestock (Ksh 31,687 or Ksh 2,640/month), 9% from casual off-farm sources and 8% from staple crops. They are considered traditional subsistence pastoralists.

⁵ US\$ 1 was equivalent to Ksh 70 Ksh.

Table 8.1: Clusters of Livelihood Diversification Strategies

	[1] specialisation casual off-farm income	[2] specialisation traditional livestock	[3] staple crop & traditional livestock	[4] integration of fruits & exotic animals	[5] specialisation in regular off-farm income
<i>no.(%) of households</i>	61(34%)	21(12%)	20(11%)	34(19%)	41(23%)
<i>main components*</i>					
CROP	staple	staple	staple+++	fruits+++	exotic&fruits
LIVESTOCK	traditional	traditional+++	traditional	exotic	both animals
OFF-FARM	casual+++	casual	casual	remittance	regular+++
<i>each component's contribution to total income (%)</i>					
Drought-resistant crop	0.01	0.01	0.03	0.02	0
Staple food crop	0.06	0.08	0.59	0.05	0.06
Fruits	0.05	0	0.02	0.32	0.06
Commercial crop	0.00	0	0	0.04	0.02
Traditional livestock	0.08	0.73	0.16	0.09	0.08
Exotic livestock	0.01	0	0	0.14	0.07
Regular off-farm income	0	0.02	0.01	0.08	0.72
Casual off-farm income	0.78	0.09	0.11	0.10	0
Remittance	0	0.06	0.07	0.12	0
Land rental	0.01	0.01	0.01	0.04	0
<i>mean annual income(ksh/year)**</i>					
Crop income	6,579 ^a	5,481 ^a	49,237 ^c	44,424 ^c	27,337 ^b
Livestock income	3,668 ^a	31,687 ^c	13,703 ^{ab}	28,037 ^{bc}	21,456 ^{bc}
Off-farm income	26,589 ^a	10,400 ^a	17,690 ^a	22,361 ^a	115,295 ^b
Land rental income	121	57	870	1,391	244
Total gross income	36,957 ^a	47,625 ^{ab}	81,500 ^{bc}	96,213 ^c	163,666 ^d

(note)*: +++ indicates the sub-group of livelihood activities which contribute most to total income.

***: sub-scripts a, b, c, d: indicate sub-sets of clusters which are statistically significantly different from other sub-sets at the
A sub-set with a subscript ^a has the smallest value and the sub-set with a subscript ^d has the largest value,
while some clusters may overlap over a few sub-sets.

Cluster [3] is made up of households with a ‘combination of staple crops and traditional livestock’. Eleven percent of households (20) belong to this cluster. On average, their annual gross income is Ksh 81,500 (Ksh 6,800/month or U.S. \$ 97 per month). They derive 59% of their total gross income from staple crops, 16% from traditional livestock and 11% from casual off-farm income.

Cluster [4] can be defined as the ‘integration of fruits and exotic animals’. Thirty-four households (19%) fall in this cluster. On average, their annual gross income is Ksh 96,213 (Ksh 8,000/month or U.S. \$114 per month). They derive 32% of their income from fruits, while 14% comes from exotic animals and 12% from remittances. One of the reasons why the households in this cluster tend to adopt more new varieties, i.e. horticulture and exotic animals, could be that they are more exposed to information and knowledge from family members working elsewhere. Horticulture and exotic animals could also be managed in more integrated ways in the sense that farmers are more likely to use manure from improved breeds of animals kept on their homestead plots for growing crops than from traditional animals extensively grazed on communal lands (Iiyama 2006b; Iiyama 2007a).

Cluster [5] represents ‘specialisation in regular off-farm income’. Forty-one households (23%) fall in this cluster. On average, their annual gross income is Ksh 163,666 (Ksh 13,500/month or U.S. \$190 per month), far higher than the other clusters. They derive 72% of their income from regular off-farm earnings (Ksh 115,295 or Ksh 9,600/month), 7–8 % from traditional and exotic animals and 6% from staple crops and fruits. They do not earn casual off-farm income or receive remittances. Employment opportunities in the study area are scarce, and the households belonging to this cluster are among the few who have a household member that is regularly employed or running their own business. Occupations include teaching, brick-making, operating small shops/kiosks, livestock trading, working for non-governmental organisations, and employment as policemen or security guards.

8.4.2: Characteristics of Households in Each of the Clusters

In this section, I identify socio-economic characteristics and the human and financial capital asset endowments of households in the different livelihood diversification clusters. The means of the key variables are shown in Table 8.2. The table also contains analysis of variance (ANOVA) results, F-tests results showing whether means are statistically significantly different across the clusters, and Duncan’s Multiple Range Test results showing if the means are statistically significantly different between sub-sets of the clusters. The results show that, except for total land access,⁶ all the other variables are significantly different across the clusters, with most statistically significant at the 1% level.

⁶ They include the land acquired through inheritance, purchase, as a gift, and through rental contracts.

Table 8.2: Characteristics of the Clusters

	[1] specialisation casual off- farm income	[2] specialisation traditional livestock	[3] staple crop & traditional livestock	[4] integration of fruits & exotic	[5] specialisation in regular off- farm income	Total	
<i>no.(%) of households</i>	61(34%)	21(12%)	20(11%)	34(19%)	41(23%)	177	F-value
<i>household characteristics*</i>							
age of the head	45.23 ^b	61.10 ^c	49.55 ^b	53.09 ^{bc}	35.46 ^a	46.85	11.07 ***
gender of the head(male=1,female=0)	0.74 ^{ab}	0.71 ^a	0.80 ^{ab}	0.68 ^a	0.95 ^b	0.78	2.66 **
education years of the head	5.52 ^b	2.67 ^a	4.55 ^{ab}	5.18 ^b	10.88 ^c	6.25	21.77 ***
participation in farmers group(yes=1,no	0.08 ^a	0.14 ^a	0.20 ^a	0.47 ^b	0.46 ^b	0.27	8.14 ***
participation in farmers group(years)	0.61 ^a	2.33 ^{ab}	2.20 ^{ab}	4.94 ^c	3.54 ^{bc}	2.50	5.06 ***
distance to a training centre(minutes)	32.38 ^b	49.90 ^c	21.25 ^a	23.09 ^{ab}	17.90 ^a	28.06	8.69 ***
family labour (Adult Equivalent)	2.95 ^{ab}	3.34 ^{ab}	2.77 ^a	3.80 ^b	3.64 ^{ab}	3.30	2.19 *
<i>land use and access*</i>							
total land access (acres)	3.69	6.59	9.56	8.80	11.79	7.55	1.38
total acres used (acres)	1.12 ^a	1.34 ^a	4.79 ^c	3.23 ^b	2.47 ^{ab}	2.28	8.45 ***
<i>livestock*</i>							
total number of livestock(TLU)	1.63 ^a	13.11 ^c	6.82 ^b	5.44 ^b	5.25 ^b	5.15	12.10 ***
number of exotic animals(TLU)	0.02 ^a	0 ^a	0.10 ^a	2.41 ^c	1.44 ^b	0.814	14.94 ***
number of traditional animals(TLU)	1.59 ^a	13.11 ^c	6.72 ^b	3.05 ^a	3.79 ^{ab}	4.33	13.74 ***
<i>access to off-farm income*</i>							
regular off-farm(yes=1,no=0)	0 ^a	0.05 ^a	0.05 ^a	0.29 ^b	1.00 ^c	0.30	135.17 ***
casual off-farm(yes=1,no=0)	1.00 ^c	0.33 ^b	0.40 ^b	0.38 ^b	0 ^a	0.50	65.75 ***
remittance(yes=1,no=0)	0 ^a	0.24 ^b	0.40 ^c	0.26 ^{bc}	0 ^a	0.12	11.40 ***

(note)*: +++ indicates the sub-group of livelihood activities which contribute most to total income.

**: a, b, c, d: indicating sub-sets of clusters which are statistically significantly different from other sub-sets at the 5% level.

A sub-set with a subscript ^a has the smallest value and the sub-set with a subscript ^d has the largest value, while some clusters may overlap over a few sub-sets.

Among the variables describing household characteristics, household heads of Cluster [5] (regular off-farm income) are the youngest (35 years old), followed by those of [1] (casual off-farm income), while those of [2] (traditional animals) are the oldest (61 years old). With respect to education, household heads belonging to Cluster [5] attended school for more years on average (11 years), followed by those of [1] (6 years), [4], [3] and [2], in decreasing order.

Households in Cluster [4] (integration of fruits and exotic animals) were more likely to participate in farmers' groups (47% of the households were group members for an average of 5 years), followed by those in Cluster [5] (regular off-farm income). In contrast, households in the other Clusters rarely joined farmers groups.

With respect to location, homesteads of the households in Clusters [5] and [4] were found to be located nearer to a local training centre (18 and 23 minutes in walking distance respectively) than those of [1] and [2] (32 and 50 minutes). Clusters [4] and [5] are also characterised by larger households (4 Adult Equivalents each⁷) than Clusters [1] and [3].

For other variables, households in Cluster [3] (staple crop and traditional animals) used more arable land (5 acres) followed by those in [4] (fruits and exotic animals) and [5] (regular off-farm), while those of [1] (casual off-farm) and [2] (traditional animals) use less land, indicating little engagement in crop production. Households of Cluster [2] own more animals,⁸ all of which are traditional breeds, while those of [4] and [5] have more exotic animals in their livestock portfolios. All of the households in Cluster [5] only have access to regular off-farm income activities, while all the households in Cluster [1] only have access to casual off-farm income activities.

8.4.3: Implications of Livelihood Diversification Strategies for Soil Management

I am interested to see if different livelihood diversification strategies correspond to the use of different soil management techniques, as different crop and animal activities (subsistence or commercial) can be managed with differing degrees of intensification (i.e. input usage), and I am not sure whether engagement in off-farm activities will promote or constrain investment in improvements in soil management. A binary logistic regression was used to test the relationship between terracing and mulching (the dependent variables, yes or no) and the clusters. For explanatory variables, I included four dummy variables to represent the clusters: [1] specialisation in casual off-farm, [2] specialisation in traditional livestock, [4] fruit-exotic animal integration, [5] specialisation in regular off-farm. I excluded [3] (staple crops livelihood pattern) as the control case because this cluster was moderate in terms of the level of specialisation and contained the least number of households⁹. Because the clusters are highly correlated with human and financial

⁷ A person over 15 is equivalent to 1 Adult Equivalent (AE), 0.65AE for over 5 to 14, and 0.24 for under 4.

⁸ The total livestock unit (TLU) is calculated as follows: a bull is equivalent to 1.29 TLU, cow 1 TLU, calf 0.7 TLU, sheep and goat 0.11TLU (Kristjanson *et al.* 2002).

⁹ If a socio-economic category is indicated by the use of five dummy variables, one approach to solve the equations for the estimation of the parameters is to arbitrarily set one of the parameters to zero (in this case, cluster [3]). Whatever the type of constraint introduced, it does enable one to obtain unique estimates for the other parameters (in this case,

capital asset endowments, as was seen in Section 8.4.2, I am able to interpret the effects of human and financial capital asset endowments on soil management through the clusters. The variables representing shares of land by location as proxies for physical characteristics of farmland (slopes and soil types) were also included. Shares of land by location summed up to one. To estimate the parameters, I excluded the share of land in the lower valley, because it is relatively flat and measures such as terracing are less likely to be implemented there. The results are presented in Table 8.3.

I found that Clusters [4] and [5] are highly associated with terracing and moderately associated with mulching, while Clusters [1] and [2] are not. In other words, households engaged in integration of horticulture and exotic animals, or those that have regular off-farm income activities are more likely to undertake soil management measures than those dependent on low-return livelihood activities. The share of land farmed in the upper valley is strongly related to terracing and weakly related to mulching, while the share of land in the highlands has a slightly positive effect on terracing. Most of the land found in the upper valleys and highlands are moderately sloped, so terracing is very effective. However, little terracing or mulching is occurring in plots located along the escarpment, where it is the most needed, and this may relate to the predominance of subsistence crops.

Table 8.3: Logistic Regressions on Resource Management

	Terracing		Mulching	
<i>% of households undertaking</i>	57%		28%	
<i>explanatory variables</i>	B	Exp(B)	B	Exp(B)
Cluster[1]:casual off-farm	0.644	1.904	0.482	1.620
Cluster[2]:traditional animals	-1.244	0.288	-0.255	0.775
Cluster[4]:fruits&exotic animals	1.383	3.988 **	1.485	4.415 *
Cluster[5]:regular off-farm	1.955	7.067 ***	1.736	5.677 **
% land in upper valley(near homestead	1.992	7.327 ***	1.276	3.581 *
% land in escarpment(steep)	0.904	2.469	1.442	4.230
% land in highlands(moderate slope, c	2.068	7.911 *	1.067	2.906
Constant	-1.866	0.155 ***	-2.854	0.058 ***
-2 Log likelihood	196.96		187.86	
prediction rate	72.3		74.0	

(note):***:statistically significant at the 1% level, **: at the 5% level, *:at the 10% level.

8.5: Discussions and Conclusion

clusters [1],[2], [4],[5]) (Everitt and Dunn, 2001).

In this Chapter, I identified the main livelihood diversification strategies being pursued in the study area, based upon the relative contributions to overall income coming from cropping, livestock and off-farm activities. I found five main livelihood diversification strategies with a wide variation in income levels. The highest gross incomes (roughly \$190/month) were earned by households with a member earning a steady income from regular off-farm employment or a formal business. Next were households that were diversified into higher return agricultural activities that included fruits and dairy animals, earning on average \$114/month. These were followed by households largely dependent on staple crops, earning \$97/month, pastoral households with traditional livestock breeds (\$57/month), and households obtaining most of their income from less steady, casual off-farm sources (\$43/month). This last, poorest category, also contained the largest percentage of households (34%).

More than half of the surveyed households (57%) fall into the two clusters that are heavily dependent on off-farm income-generating activities, i.e. Cluster [1] or Cluster [5]. This result supports a trend reported by other authors who found that income inequality between households within many rural African communities has deepened, and is attributable largely to differences in off-farm activities and earnings. They suggest that substantial mobility barriers to high return niches exist within the rural off-farm economy (Reardon 1997; Ellis 2000; Barrett et al. 2001a; Bryceson 2002; Ellis and Freeman 2005). In the study area, while many households depend on off-farm activities, organised off-farm labour markets do not exist. Relatively high-paying and reliable formal employment opportunities are limited to a few civil servant, teaching, or development agency positions. Many rely on more risky and less remunerative self-employment options. Others enter forests and cut and burn trees to make charcoal whenever in need of cash. Similar findings are reported by Freeman and Ellis (2005) from a case study in south-western Kenya, where poorer households are engaged in strategies with low-return off-farm activities such as collecting firewood while well-off households are diversified into high-return off-farm activities such as salaried employment. Lack of skills and knowledge, and significant barriers to entry for limited high-return opportunities tend to leave the poor with less diversified income portfolios and lower, more variable earnings.

These livelihood diversification strategies in turn affect decisions by households regarding adoption and implementation of soil management measures. While Morera and Gladwin (2006) found in their studies of Honduras hillside communities that off-farm income activities actually discouraged households from undertaking soil conservation measures, the result was mixed, as I differentiated off-farm income activities into high and low return categories. I found that households engaged in integration of horticulture and exotic animals, or those that have regular off-farm income activities, are more likely to invest in soil management measures than those dependent on low-return livelihood activities. They can afford to invest cash in such practices and have also diversified into more commercially-oriented crop and livestock activities that require more inputs and management. In contrast, I found that poorer, less diversified households are heavily dependent on utilising trees from forests (Cluster [1]) and grazing their animals on communal lands (Cluster [2]), while typically earning very little from crops or livestock. Low-return combinations of activities and little diversification mean households stay trapped in poverty, and these households are not investing in improved, or even sustainable, soil

management practices.

The findings reveal that human capital asset endowments (knowledge and skills) of households are major factors differentiating the livelihood strategies they pursue, and how successfully they pursue them, from both an income and soil management perspective. I also see that households involved in regular off-farm income activities are more likely to employ soil management measures. Regular off-farm income activities help to provide capital and to mitigate risks when adopting market-oriented on-farm activities, as households can cope with risks inherent in commercial agriculture better than when they depend only on farm activities (Evans and Ngau 1991). In turn, high-return on-farm activities provide households with incentives to invest in maintaining soil fertility and structure.

How best this knowledge can be translated into action that sustainably alleviates poverty is the next question, and not an easy one. A better understanding of what livelihood strategies mixed crop-livestock and pastoral households are pursuing is needed at both national and local levels, however, this knowledge does not guarantee better informed decision making. The finding regarding the importance of education for the adoption of relatively high-return livelihood strategies, and in turn the correlation of high-return portfolios with investment in improved soil management practices supports the recommendation made by Barrett and others (Barrett et al. 2001a; Ellis and Freeman 2005) that national development policies and strategies need to be multi-sectoral, and encompass education and farm as well as off-farm activities.

Given that the households with extremely low-return, undiversified portfolios were found to be more dependent on the use of natural resources while much less likely to pursue sustainable soil management practices, I suggest that interventions and policies aimed at improving the diversity and profitability of livelihood portfolios of the poor, which improves their ability to make such investments, are needed. Strengthening collective efforts aimed at natural resource management, rather than a focus on restricting access to communal natural resources is another policy direction that community members and leaders indicated they would support. In the past, the customary age-set system was used to ensure coordination among community members in the management of common resources, but these days the system is less binding due to communication gaps between the educated and the less/uneducated. In this study I was not able to measure differences in access to social institutions and kinship networks across Rokocho households. However, discussions with household members and community leaders revealed that the most vulnerable households are increasingly losing access to social capital assets. Skewed access to social capital assets in turn negatively affects governance of common resources. Community leaders voice concerns that socio-economic differentiation may in the future alienate the poor from the benefits arising from social capital and feel that bringing people together to negotiate and agree upon access rules and enforcement will be more effective than approaches aimed only at restricting access to communal resources.

The methodology used in this study was found to be as effective at delineating and understanding drivers of different livelihood strategies and links to soil management practices in rural Kenya, as more complicated, time and data-intensive approaches taken by, for example, Tiftonell et

al.(2005). The five farm types they derived did were in fact very similar to my five clusters, and they also found that the wealthier farm types invested more in natural resource management practices. This suggests that categorising households based on the proportion of income coming from various crop, livestock and non-farm activities is a relatively simple but effective approach for investigating livelihood strategies and implications for sustainable management of the environment in rural Kenya.

Part III: Kenyan Case

Chapter 9: Crop-Livestock Diversification Patterns in Relation to Income and Manure Use in Kerio River Basin¹

9.1: Introduction

Mixed crop-livestock systems are the most important mechanisms for producing food across sub-Saharan Africa, where 166 million poor agro-pastoralists live (Kristjanson and Thornton 2004; Herrero et al. 2007). Recently these systems have experienced tremendous socio-economic changes and faced environmental challenges. As livelihoods transform from subsistence to a more monetary economy due to infrastructure and educational development, the need to earn cash has increased. Such development is often accompanied by an increasing scarcity of land for extensive farming and by continuous use of farmland without fallow and is exacerbated by population growth (Shepherd and Soule 1998; Tittonell et al. 2005). The rise in population has increased pressure on soils; Place et al. (2003) estimated that two-thirds of agricultural land in Africa has been degraded. Mixed crop-livestock farming systems in Kenya are no exception. Smallholders have diversified their farming activities to include various food crops and local animals, and some have introduced exotic cash crops and improved animal breeds.

There should be diverse interactions between various crop and livestock components of mixed systems during the intensification process (Kristjanson and Thornton 2004). Ensuring sustainable intensification and economically profitable integration of crop-livestock farming to meet the welfare and environmental goals of people is paramount (Williams et al. 1999; Place et al. 2003). Better utilisation of organic manure from livestock has the potential to ensure sustainable crop-livestock intensification for poor agro-pastoralists, especially as they often cannot afford to buy expensive inorganic fertilisers (Bationo et al. 2004; Makinde et al. 2007). Efficiently applied, crop and livestock activities would not only contribute to income generation but also to higher crop productivity and better environmental health through supplying nutrients to soils without relying on external resources. A better understanding of diverse interaction of crop and livestock components and which of them are more associated with welfare and manure application should be a first step toward developing more effective extension services.

Many studies have tried to determine how households decide to integrate manure into their

¹ This chapter is a modified version of Iiyama et al. (2007a), 'Crop-Livestock Diversification Patterns in Relation to Income and Manure Use: A Case Study from a Rift Valley Community, Kenya,' *African Journal of Agricultural Research*, 2(3):58-66, Iiyama et al. (2007b) 'The Status of Crop-Livestock Systems and Evolution toward Integration' *Annals of Arid Zone*, 46(3&4):1-23, as well as of Iiyama (2006a; 2006b) ILRI LUCID Project Working Paper 51/52.

farming activities, i.e. household characteristics (family composition, education, land and livestock) and physical characteristics of farms (soil type, slopes and distance to homesteads) (Clay et al. 2002; Freeman and Coe 2002; Place et al. 2002; Place et al. 2003). However, there have been few empirical studies to look at the relationship between manure use and distinctive crop-livestock activities. Even within a small area, one can observe inter-household heterogeneities in the adoption of different sets of crop-livestock types, i.e. indigenous or exotic, subsistence or commercial, which have different levels of economic returns and input use (Titttonell et al. 2005). If there are some complementarities between particular types of crop and livestock production, they must be understood as a set. To formulate an effective extension service, it is more practical to identify portfolios of varieties that improve welfare and ensure sustainable soil management rather than to identify household/farm characteristics to influence better soil management. Some patterns may serve to increase income and ensure food security and to counter risks for households by diversification. However, without intensified use of inputs, such patterns might be environmentally unsustainable in the long term. In such cases, we need some interventions to encourage households to better manage and utilise their resources.

In this study we define ‘crop-livestock diversification (CLD)’ patterns as particular combinations of crops and animals. Some CLD patterns have more complementarities between components than others do. Diversification occurs where components co-exist rather independently on the farm. Their combination serves to reduce risks, but their interactions are minimal. Conversely, integration occurs where the components are interdependent (van Keulen and Schiere 2004). Application of organic manure from animals to crops can be one indicator of better integration.

This chapter presents ongoing inter-household heterogeneities in CLD patterns from an agro-pastoral community in the Kenyan Rift Valley. The main purposes of this study are to:

- Estimate driving factors of changing livelihoods and land use patterns in the study area
- Assess the economic returns, intensification levels, management incentives of respective crop and livestock activities.
- Identify the current dominant CLD patterns adopted by the households.
- Investigate which CLD patterns are associated with higher income and with more intensive manure use.
- Examine which factors affect a households’ decision to adopt better CLD patterns.

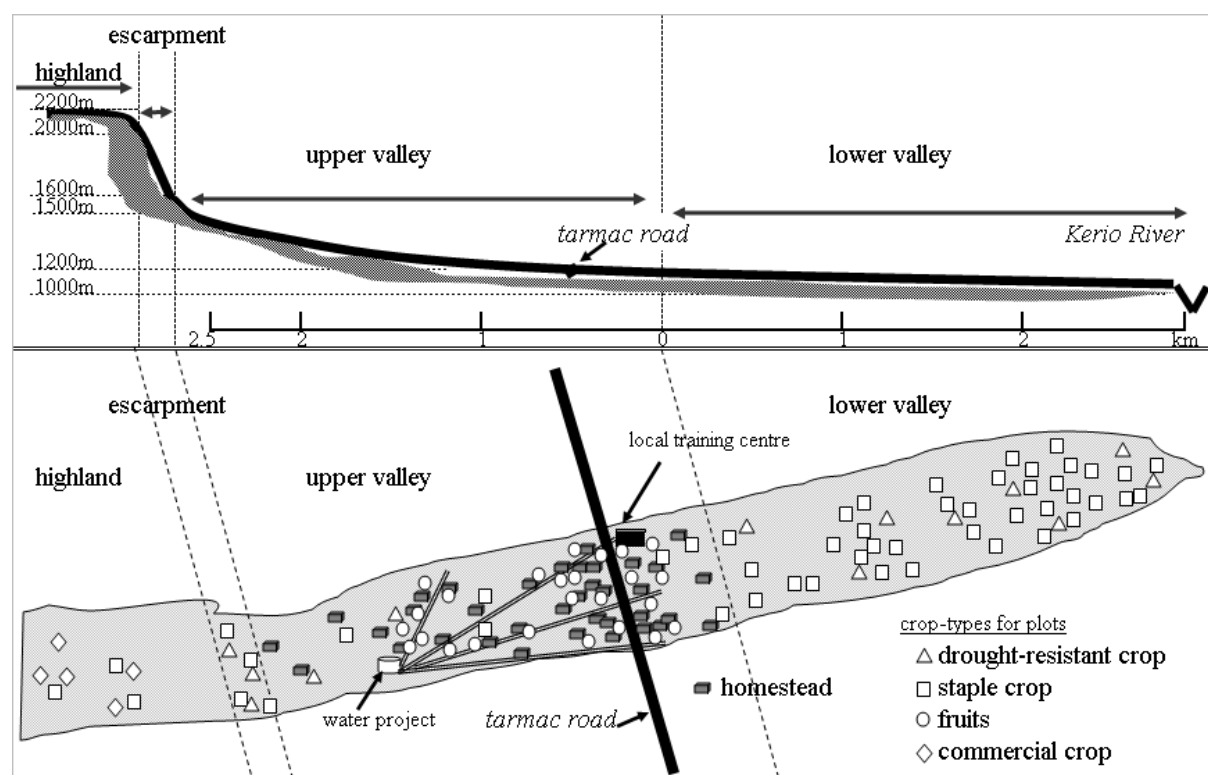
The next section describes the background information of changing livelihoods and land use patterns and of crop-livestock activities in the study area. Section 9.3 explains the analytical methods used in this study. Sections 9.4 and 9.5 present and discuss the results.

9.2: Changing Land Use Patterns in the Kerio River Basin

9.2.1: Changing Livelihoods, Land Use and Transactions

As reviewed in Chapter 8, by the early 1960s it was considered unviable to farm in the Kerio basin with no permanent sources of water. During the 1970s, in search of land, people slowly started to settle in the valley floor. Initially, expansion of grain production and extensive grazing in the lower valley led to serious soil degradation, with loss of natural vegetation and formation of gullies. Since 1985, in turn, the construction of the tarmac road has greatly transformed the livelihoods of people in the valley. Institutions such as African Inland Church (AIC) have also stimulated development initiatives by providing villagers with training for horticulture and intensive grazing of exotic livestock breeds on the homestead plots in the upper parts of the valley, as an alternative to extensive grazing of indigenous animals in the lower valley. Furthermore, the development of water projects has allowed more people to adopt intensive farming on homesteads. Residents claim that soils in the upper valley have been healing due to manure application, terracing and mulching in contrast to the degraded soils in the lower valley. Figure 9.1 shows the present land use image in the study area.

Figure 9.1: Land Use Image in the Study Area



These developments have also led to changes in land use and transactions. The land tenure system in Rokocho is primarily customary. While land registration for individual plots has been practised in the highland since the 1960s, no land has been registered with title deeds in the valley. Yet even before the 1970s, when only a few people settled in the valley, the clan land in the upper valley were already subdivided into family plots. Most of subdivided plots were acquired through inheritance. On the other hand, the lower valley land remained communal as open commonages. Only after 1978, the clan elders demarcated and subdivided the lower valley land for clan members present in the valley, as demand for exclusive individual arable plots increased.

In turn, land sub-division among mail hairs for generations has resulted in individual family members having very small pieces of land. Some family plots are currently too small to be further subdivided. In such cases, an individual who inherited little land but is willing to expand cultivation is encouraged to acquire land elsewhere by purchasing, hiring or borrowing a plot from relatives, or from those who either inherited large tracts of land or underutilise land. Even in the past, purchase and rental contracts of plots were not uncommon, and the transaction of land was carried out through barter trade (paying by animals). This has been recently replaced by cash transaction where one acre plot is sold at Ksh 20,000 and is rented at Ksh 1,000 per year. People from other clans have not been discriminated against acquiring land through purchase or rental, provided that they follow clan rules and respect plot boundaries, indicating the flexibility of the customary land tenure system in Rokocho.

While individual rights to plots have been well recognized if marked with posts, land has been often used as an open access resource for grazing by other clan members, unless it is properly fenced. Fencing of plots in the valley started in 1978 and became more obvious after the 1990s. These days, many of the homesteads plots on which horticulture is practiced are fenced either with barbed wire or livefences (thorny bushes). Fencing in turn implies the shrinkages of open areas for grazing animals and often leads to disputes between owners of a large herd and plot owners. A plot owner could claim at the clan elders' court to demand compensations from a livestock owner for crop damages. High penalties to livestock owners have discouraged them from keeping large herds of indigenous livestock. Consequently, some pastoralists have moved their homesteads and livestock away from fenced homesteads.

It is indicated that rural sub-populations may respond differently to population pressure and development opportunities, either by agricultural intensification or extensification. It is necessary to understand heterogeneous land use/resource management patterns among sub-populations and overlapping claims over land, especially between progressive farmers and conservative pastoralists, in order to evaluate whether the land institution would evolve smoothly in response to changes in resource endowment as predicted by the population pressure school.

9.2.2: Estimated Land Use Changes in Rokocho over the Past Four Decades

At the time of the survey conducted in 2006, the 177 Rokocho households had access to 386 plots. It is impossible to make an accurate estimation on how development in Rokocho has changed land use pattern in the sub-location, i.e., for the last four decades, since people started settling in the basin after the 1970s. Yet, I attempted to estimate the land use change in the following way. The households were asked to report the year/modes of acquisition of all the plots they claim to own/hire today. They were also asked to provide information on crop types as well as fence materials before and after the acquisition. From this information, chronological changes in the number of plots with land use patterns over the four decades were estimated. Of course, over years, those plots may have changed hands and may have been sub-divided. Therefore it is far more irrelevant to estimate their sizes. The figures shown in the Tables 9.1 and 9.2 below are

based on rough estimates on changes in the number of plots by crop or fence types in the years 1976, 1986, 1996 and 2006, but should not be taken strictly.

Table 9.1: Changes in the Land Use by Rokocho households

plots per crop type	1976		1986		1996		2006	
	no.	%	no.	%	no.	%	no.	%
Drought-resistant	22	6	43	11	44	11	14	4
with staple			2	1	10	3	17	4
with fruits							1	0
with staple+fruits					1	1	2	1
Staple	9	2	43	11	80	21	106	27
with fruits			1	1	3	1	8	2
Fruits			5	1	33	9	82	21
with commercial							1	0
Commercial	5	1	4	1	7	2	6	2
with staple	4	1	4	1			4	1
Napier							2	1
Nothing	346	90	284	74	204	53	143	37
TOTAL	386		386		386		386	

Table 9.1 shows that in 1976, 90% of plots (including those in the lower valley that was demarcated later) were bushy, planted with nothing, but the ratio of underutilised plots decreased to 37% by 2006. Plots planted with drought-resistant crops, including sorghum and millet, increased from 6 to 11% between 1976 and 1986 and later was intercropped with other crops by 2006. In 1976, only 2% of plots were planted with staple food crops such as maize and beans, but substantially increased in 1986 after the 1978 demarcation of shambas in the lower valley. In 2006, 27% of plots were planted with staple food crops (maize, beans, green grams, cowpeas and groundnuts). Fruits growing started in 1986 by a few villagers who received training from AIC and took advantage of its water project. Between 1996 and 2006, the number of fruits plots increased from 9 to 21%, probably because other villagers started emulating successful neighbours thanks to demonstration effects and because tapped water became available to more households after the completion of the water tank project by the Netherlands agency in 1999.

Table 9.2: Changes in the Number of Fenced Plots owned by Rokocho Households

plots per fence type	1976		1986		1996		2006	
	no.	%	no.	%	No.	%	no.	%
barbed wire	10	3	22	6	58	15	98	25
livefences			3	1	14	4	36	9
No	376	97	361	94	314	81	252	65
TOTAL	386		386		386		386	

Table 9.2 in turn indicates the increase in the number of fenced plots. In 1976, 3% of plots were

fenced with barbed wire. These should be the registered plots planted with commercial crops, such as wheat and vegetables, in the highlands. After 1986, the year fruits were introduced, the number of fenced plots increased. In 2006, 25% of plots were fenced with barbed wire and 9% with livefences, indicating shrinkage of open areas for grazing animals, especially in the upper valley.

While the individual rights to plots have always been recognised in Rokocho under the customary tenure systems, these estimates indicate the evolution toward more exclusive land rights in some sections of the village, especially the upper valley, in response to changes in land use patterns from subsistence/extensive agro-pastoral activities to semi-commercial farming in response to the introduction of intensive technologies.

9.2.3: Current Crop Production Activities

Rokocho households adopt heterogeneous sets of crop types in their livelihood portfolios. Let me categorise various kinds of crops planted in the Kerio Valley into:

- Drought-resistant crops such as indigenous varieties such as sorghum, millet, and cassava
- Staple crops such as maize, beans, cowpeas, green grams, groundnuts
- Fruits such as mangoes, pawpaws, citrus, bananas, avocados
- Commercial crops such as wheat, potatoes, carrots, mostly grown on plots in highlands.

Table 9.3 looks at the ratio of the 177 Rokocho households currently engaged in cultivation of a particular crop. Among the 177 households in Rokocho, 18% of households plant some drought-resistant crops, 57% staple crops, fruits 51%, and only 5% plant commercial crop (commercial crops are grown mainly on registered plots in the highlands). On the other hand, in processing the data, it turned out difficult to compare yields in weights between each crop variety, because the units of measurement are different between grain (kg) and fruits. Thus instead, the proportion of harvests consumed at home is indicated and compared between crop types. 80% of the drought-resistant crops and 46% of staple crops are consumed at home while only 10-11% of fruits and commercial crops are consumed by self. Drought-resistant crops are mainly planted for subsistence purpose while staple food crops generate income and food security. In contrast, fruits and commercial crops are intended for market and planted for commercial purpose.

Table 9.3: Self-Consumption Ratio per Crop Type

	Drought-resistant	Staple crop	Fruits	Commercial
No. of households(%)	31(18%)	101(57%)	90(51%)	9(5%)
self-consumption (%)	80	46	11	10

9.2.4: Current Livestock Production Activities

The Rokocho households are also heterogeneous in adopting a portfolio of livestock assets:

- Improved cattle, including exotic (dairy) and crossbreed cattle
- Dairy goats
- Indigenous cattle
- Indigenous sheep and goats, often abbreviated as ‘shoats’

These animal types are very different in productivity, management, and degree of integration with crop activities, as shown in Table 9.4. In order to compare economic cost and revenue per animal unit for different types of livestock, the number of animal holdings was converted into the Total Livestock Unit (bull: 1.29 TLU, cow: 1TLU, calf: 0.7 TLU, sheep and goat: 0.11 TLU).

Table 9.4: Acquisition, Productivity and Management per Animal Type

	Improved cattle	Dairy goats	Indigenous cattle	Sheep & goats
No. of households(%)	37(21%)	17(10%)	79(45%)	115(65%)
No. of animals	3.95	2.76	6.51	22.93
TLU	3.78	0.30	6.04	2.52
No. of adult females*	2.32	1.53	3.80	-
% of inherited	14	0	44	30
% of purchased	95	100	58	75
milk(L)/adult female	2.60	1.00	0.90	-
milk(ksh)/adult female	12,395	537	1,085	-
no. of animals sold				
during the past 1 year	0.59	0.71	1.25	4.04
price(ksh)/animal	4,495	2,129	4,199	785
% of open grazing	46	29	95	93
% of semi-zero grazing	51	47	5	7
% of zero grazing	5	24	0	0
feed(ksh)/TLU	1,159	107	0	3
total costs(ksh)/TLU**	1,417	7,592	676	1,526
gross income/TLU	7,406	15,838	2,567	1,885
net income/TLU	6,037	8,246	1,904	359

*only for exotic/indigenous cattle and dairy goats. ** including feed, dipping, spraying and other medicines.

Improved cattle are kept by fewer households (21%, 3.78 TLU on average), than indigenous cattle (45%, 6.04 TLU). Dairy goats are kept by even fewer families (10%, 0.30 TLU or 2.76 animals). 65% of the households own on average 2.52 TLU of shoats (22.93 animals). Exotic animals were more likely to be purchased by household themselves (95% for improved cattle, 100 % for dairy goats). On the other hand, 30-44% of indigenous cattle and shoats are inherited.

Improved cattle can produce as much as 2.60 L of milk while indigenous cattle can produce 0.90 L a day, less than 1.00 L per day by a dairy goat. Some milk is consumed by the household while some is sold to local kiosks or to neighbours at 25 Ksh/L, as milk tea is popular among Rokocho residents. A household can earn Ksh12,000 a year if it sells half (1.3 L) of milk from a crossbred cow while the rest consumed at home. In contrast, indigenous cattle produce little milk, and these days some owners even do not milk them that are left for grazing in the lower valley. In turn, owners of indigenous livestock earn income by selling their animals. 1.25 cattle, 4.04 shoats were sold by their owners during the 12 months preceding the survey, while 0.59 improved cattle and 0.71 dairy goat were sold. The price per animal was Ksh 4,199 per indigenous cattle. Improved cattle were sold at Ksh 4,495 per animal, which was rather inexpensive. Probably the owner sold calves rather than mature ones, which can be sold at Ksh 10,000. A dairy goat was far expensive (Ksh 2,129/animal) than an indigenous shoat (Ksh 785/animal).

Exotic animals are more likely to be semi-zero grazed, i.e., kept within the homestead (51% for improved cattle and 47 % for dairy goats), or zero-grazed, i.e., completely fed manually, for dairy goats (24%). In contrast, traditional animals are grazed on open, unfenced areas. While indigenous cattle and goats are freely grazed on open areas, owners of improved cattle spend on supplementary feed for nutrition. While total cost spent per TLU on dairy goats should be overvalued (because a dairy goat is calculated as 0.11 TLU, the amount spent per animal could be a tenth of that in TLU), but even so, dairy goats require intensive inputs than local counterparts.

Exotic and traditional animals have different economic returns per TLU, i.e., Ksh 7,406 for improved cattle and Ksh 2,567 for indigenous cattle, Ksh 15,838 for dairy goats and Ksh 1,885 for indigenous shoats. Indigenous livestock may be kept not necessarily to contribute to income flow, but rather for customary or as savings for security reasons (Ayalew et al. 2003; Ashley and Nanyeenya 2005). Households may attach different values to exotic and traditional animals, and adopt different management. Intensive management of animals also have some implications on integration with crop production. Dung of extensively grazed traditional animals is difficult to be collected, therefore rarely recycled as organic manure. Manure from animals kept within homestead plots in turn are easily applied to crops planted on the same plot. Understanding implications of differences in management incentives between animal types and their integration with crops should be important in evaluating sustainability of crop-livestock systems.

9.3: Methods

Other studies which investigate the effects of agricultural technology choices by individual households on income levels and adopting soil conservation measures rarely differentiate distinctive crop and animal types but simply aggregate them, as ‘total land under cultivation’ or ‘total animal holdings’ (Clay et al. 2002; Freeman and Coe 2002; Place et al. 2002; Morera and Gladwin 2006). However, when there are diversities in crop and animal types (i.e. there are many

variables) and complementarities between particular types (i.e. there are high correlations between variables), these aspects should be reflected in the analysis of their association with income and soil management levels. One needs to invent a new set of variables to represent CLD portfolios of households. Four methods were used to analyse the data.

First, descriptive statistics of crop-livestock activities were summarised. Crop activities were presented in terms of the acreage planted by particular crop types, while livestock activities by the number of livestock by animal types owned for each household. To calculate the area planted with a particular crop is not straightforward, since households often have access to more than one plot and plant different crop types on the same plot, as in other parts of rural Africa (Tittonell et al. 2005). Where this was the case, households were asked to approximate the percentage of the plot devoted to a particular crop type (Shepherd and Soule 1998; Benin et al. 2004).

Secondly, principal component analysis was used to derive a set of new variables (principal component scores) to represent CLD patterns from variables representing crop-livestock portfolios of households. This analysis is a tool to describe the variation of a set of multivariate data in terms of a set of uncorrelated variables, each of which is a particular linear combination of the original variables, when original variables are many and highly correlated one another. If the first few components turn out to account for most of the variation in the original data, derived principal components can be used to summarise the data with little loss of information (Everitt and Dunn 2001). For example, when particular crop and livestock activities are complementary (positively correlated) or substitute (negatively correlated), principal components can reflect such aspects. If a principal component is highly associated positively with factor weights for crop type [A] and animal type [B] but negatively associated with crop type [C], this principal component represents a CLD pattern with crop type [A] and animal type [B] with less of crop type [C]. The analysis also yields scores for households with each principal component. Households allocating more land to planting crop type [A] but less to crop type [C] while owning more animal [B] in their livestock portfolio are given high scores for the principal component representing a CLD pattern with crop type [A] and animal type [B].

Thirdly, ordinary least squares (OLS) analysis was used to estimate which CLD patterns were associated with a higher level of household income (Ksh per year)² and increased use of organic manure (kg/total land area in acres used by household). The quantity of manure used was aggregated for the total number of acres a household uses. For explanatory variables, the principal component factor scores were used to indicate the degree of engagement by households in a particular CLD pattern.

Fourthly, the households were ranked with the principal component factor score for the CLD pattern found to be associated with higher household income and manure use, in the previous section, and grouped into three groups (tertile). Then mean values of socio-economic variables representing household characteristics (such as age, gender and education years of the head) were compared among the groups, to identify which of these factors influence households to adopt

² US\$ 1 was equivalent to Ksh 70 in 2006.

better CLD patterns while keeping others from doing so.

9.4: Results of Analysis

9.4.1: Crop-Livestock Activities

The summary of statistics of the variables representing crop-livestock activities in the study area are presented in Table 9.5. Of the total amount of land used, most (55%) was planted to staple crops followed by fruits (35%) with much less allocated to drought-resistant and commercial crops. The number of livestock owned was calculated as total livestock units (TLU). Of these, indigenous cattle took up the highest average proportion (52%) of the total average number of animals owned by a household (5.14). This was followed by sheep and goats (32%) and improved cattle (15%); dairy goats on average accounted for 1% of the total livestock holding. These averages, however, tend to mask the heterogeneities in adopting certain crop/livestock types among households and particular complementarities between crops/livestock.

Table 9.5: Descriptive Statistics of Variables on Crop-Livestock Activities

	N	Mean	Std.D	Min	Max	share
<i>Variables of Crop-Livestock Activities</i>						
land with drought-resistant crop (acres)	177	0.14	0.40	0	2	0.06
land with staple crop (acres)	177	1.27	2.59	0	21	0.55
land with fruits (acres)	177	0.80	1.29	0	10	0.35
land with commercial crop (acres)	177	0.07	0.39	0	4	0.03
total land used (acres)	177	2.28	2.99	0	24	
no. of improved cattle (TLU)	177	0.79	1.88	0	10	0.15
no. of dairy goats (TLU)	177	0.03	0.11	0	1	0.01
no. of indigenous cattle (TLU)	177	2.69	5.31	0	38	0.52
no. of sheep/goats (TLU)	177	1.64	4.36	0	44	0.32
no. of total animals owned (TLU)	177	5.14	7.45	0	44	
<i>Variables for Income/Manure Application</i>						
total gross income	177	83,989	95,235	4,150	666,200	
% of households applying manure (yes=1, no=0)	177	0.49	0.50	0	1	
amount of manure applied per acre (kg/acre)	177	152	473	0	3,800	

A correlation matrix of standardised scores of the variables representing crop and livestock activities is shown in Table 9.6. The ratio of land with staple crop was negatively correlated with fruits (-.61), positively with total land used (.25), % of indigenous cattle in total TLU (.21), and total TLU (.24). On the other hand, the ratio of land with fruits was positively correlated with % of improved cattle in total TLU (.25). The ratio of improved cattle in total TLU was negatively

correlated with those of indigenous cattle (-.33) and sheep / goats (-.21). The ratio of indigenous cattle in total TLU was negatively correlated with that of sheep / goats (-.31), but positively with total TLU (.35). The ratios of land with commercial crop and of dairy goats did not have any correlation with the other variables.

The finding shows that there should be some ‘patterns’ of crop-livestock combinations. Households that grow fruits tend to keep improved breeds of livestock intensively, while those devoting bigger portions of land to staple crops tend to use larger areas for crops and to own more indigenous cattle. Therefore, rather than independently dealing with variables representing engagement in each crop/livestock type, it is better to look at them in an integrated manner.

Table 9.6: Correlation Ratios between Crop-Livestock Activities

Z scores	drought-resistant	staple	fruits	commercial	total acres	improved cattle	dairy goats	indigenous cattle	sheep / goats	total TLU
Land allocated to										
drought-resistant(%)	1									
staple(%)	-.20(**)	1								
fruits(%)	-.32(**)	-.61(**)	1							
commercial(%)	-0.09	-0.10	-0.03	1						
total land used (acres)	-0.14	.25(**)	0.00	0.08	1					
Animal held in										
improved cattle(%)	-.16(*)	-0.07	.25(**)	0.12	.26(**)	1				
dairy goats(%)	-0.06	0.03	0.05	-0.04	-0.01	0.00	1			
indigenous cattle(%)	-0.12	.21(**)	-0.08	-0.04	-0.05	-.33(**)	-0.10	1		
sheep&goats(%)	0.01	-0.10	-0.03	-0.08	0.00	-.21(**)	-0.09	-.31(**)	1	
total TLU	-.16(*)	.24(**)	-0.15	-0.08	0.13	0.04	-0.08	.35(**)	0.00	1

**. Correlation is significant at the 0.01 level, *. At 0.05 level (2-tailed).

9.4.2: Identification of Dominant CLD Patterns

Principal component analysis was used to derive a new set of components representing CLD patterns from the original variables representing the crop-livestock portfolios. In choosing the number of principal components, two criteria were used: (1) retain just enough components to explain a large percentage (between 70% and 90%) of the total variation in the original variables and (2) exclude those principal components whose eigenvalues are less than the average, or 1 for this case, as the components are extracted from the correlation matrix (Everitt and Dunn 2001).

The results of the principal components analysis are summarised in Table 9.7. Five principal components, which explain 71.52% of the total variances in the data, were extracted from the original crop-livestock portfolio variables.

Table 9.7: Dominant CLD Patterns (Principal Components)

	Component				
	CLD I	CLD II	CLD III	CLD IV	CLD V
	maize+ind cattle	ex cattle+fruits	extensive crop	sheep/goats	dairy goats
	+staple crop	+improved cattle	-indigenous cattle		
	+indigenous cattle	+fruits, +land use	-fruits	+sheep&goats	+dairy goats
	- fruits	-drought-resistant	+land use		-commercial crop
Z-scores					
<i>Land Allocated to</i>					
drought-resistant crop(%)	-0.04	-0.66	0.22	-0.34	-0.21
staple crop(%)	0.80	0.18	0.35	-0.06	0.20
fruits(%)	-0.70	0.35	-0.48	0.24	0.08
commercial crop(%)	-0.14	0.24	0.11	-0.40	-0.50
total land used (acres)	0.15	0.57	0.46	0.11	-0.06
<i>Animals Held in</i>					
improved cattle(%)	-0.35	0.66	0.28	-0.14	-0.10
dairy goats(%)	-0.10	0.07	0.04	-0.30	0.83
indigenous cattle(%)	0.60	0.07	-0.67	-0.06	-0.12
sheep & goats(%)	-0.16	-0.34	0.38	0.74	0.00
total livestock unit (TLU)	0.54	0.30	-0.17	0.37	-0.11
Initial Eigenvalues					
Total	1.98	1.64	1.32	1.14	1.08
% of Variance	19.76	16.39	13.20	11.42	10.76
Cumulative %	19.76	36.15	49.34	60.76	71.52

The five principal components are explained as follows. Staple crop (mainly maize) and indigenous cattle were positively associated with the first principal component, while growing fruits was negatively correlated with this component. Thus this principal component is interpreted as **CLD I [maize and indigenous cattle]**. The second component is strongly associated with the proportion of improved cattle and total land used and negatively associated with the proportion of land sown to drought-resistant crops. Although it was less than 0.5, the weight for fruits was higher than that for the other components (**CLD II [improved cattle and fruits]**). The third component is negatively associated with indigenous cattle and fruits while positively associated with total land used (**CLD III [extensive crop production]**). Proportion of sheep and goats in the total TLU was strongly associated with the fourth component (**CLD IV [sheep and goats]**). Finally, the fifth component is strongly associated with the proportion of dairy goats in the total TLU (**CLD V [dairy goats]**).

9.4.3: Implications of CLD Patterns on Income and Intensified Manure Use

The average total household income in Rokocho Sub-location was Ksh 83,989 per year, with 49% of the households using manure (Table 9.5). However, it is likely that there are substantial differences in income levels and in the intensity of manure application among households, as they

pursue different CLD patterns. The principal component scores derived from the analysis can be used as explanatory variables to define the engagement of households in the particular CLD patterns. The dependent variables are total household income level and the quantity of manure input per acre. The results of OLS regressions are presented in Table 9.8.

Table 9.8: Implications of CLD Patterns on Total Income and Manure Input (OLS Results)

	total gross income		manure per acre	
	coefficient	t	coefficient	t
(Constant)	83,988.79	14.09 ***	152.13	4.52 ***
CLD I: maize + indigenous cattle +staple crop, +ind cattle, -fruits	-71.96	-0.01	-122.78	-3.64 ***
CLD II: exotic cattle + fruits +improved cattle, +fruits, +land use	48,054.37	8.04 ***	103.34	3.06 ***
CLD III: extensive crop production -indigenous cattle, -fruits, +land use	21,430.82	3.59 ***	-48.61	-1.44
CLD IV: sheep/goats +sheep&goats	11,687.90	1.96 *	27.70	0.82
CLD V: dairy goats +dairy goats, -commercial crop	-7,632.36	-1.28	2.84	0.08
R Square	0.33		0.13	
Adjusted R Square	0.31		0.10	
F	16.60 ***		5.08 ***	

(note) 177 households. ***:significant at <.01, **: <.05, *: <.1.

CLD patterns II, III and IV were significantly and positively associated with income. On the other hand, in regard to manure input per acre, CLD pattern II was positively correlated, while CLD pattern I had negative effects. Thus it is indicated that CLD pattern II (improved cattle and fruits) is not only associated with better income but also with more intensified manure use through better crop-livestock integration. Fruits are more likely to be planted on fenced homestead plots. Exotic animals are managed with more intensive grazing within an owner's plots, because they have a higher economic value than indigenous cattle do, therefore their dung is more easily available for applying to fruits. In contrast, CLD pattern I (maize and indigenous cattle) is significantly associated with lower manure input per acre. Despite being associated with more indigenous cattle, it appears that manure is rarely utilised for staple crops. CLD pattern III (extensive crop production) is significantly associated with higher household income but it is indicated that this pattern has no significant associations with more manure application.

9.4.4: Household Characteristics

In the previous section, CLD pattern II of improved cattle and fruits was found to be more associated with higher household income and application of manure. To examine household characteristics with higher engagement in CLD pattern II, the 177 households were ranked by

factor score II and grouped into three or tertile. The means for income components, application of manure, and variables representing household characteristics, such as age, gender, education years of the head, family labour (in adult equivalent³), number of years in farmers' group and distance in minutes to local training centre are summarised in Table 9.9.

Table 9.9: Groups of Households Ranked According to Principal Component Factor II

	CLD II tertile 1	CLD II tertile 2	CLD II tertile 3	Total average	F
no. of households	58	59	60		
<i>Income Components</i>					
total gross income(ksh/year)	35,870	71,149	143,129	83,989	24.78 ***
off-farm income(ksh/year)	25,039	37,983	66,470	43,398	6.62 ***
crop income(ksh/year)	5,420	21,813	42,092	23,324	16.99 ***
livestock income(ksh/year)	5,190	11,468	33,642	16,927	19.79 ***
<i>Application of Manure</i>					
ratio of households applying manure	0.21	0.54	0.72	0.49	18.89 ***
manure use per acre(kg/acre)	39.07	145.97	267.48	152.13	3.55 **
<i>Household Characteristics</i>					
age	52.36	43.25	45.05	46.85	4.55 **
gender(male1,female0)	0.60	0.83	0.90	0.78	8.90 ***
education years of the head	4.33	6.31	8.05	6.25	10.49 ***
family labour (Adult Equivalent)	2.62	3.40	3.85	3.30	7.88 ***
participation years in farmers group	0.90	2.47	4.08	2.50	6.29 ***
minute distance to training centre	35.66	24.80	23.93	28.06	4.48 **

On average, the top tertile group earns about Ksh 143,129 a year, nearly double the earning of the middle tertile group (Ksh 71,149) and four times the low tertile group (Ksh 35,870). Of the high tertile group, 72% apply organic manure on their plots (on average 267 kg/acre), but only 21% of low tertile households do so (on average 39 kg/acre). If we turn to household characteristics, the top tertile group relative to the other two groups is on average characterised by larger households (8 AE) headed by more educated males (6.3 years), who have participated in a farmers' group for a longer time (over 4 years) and with homesteads located nearer to local training centre. Conversely, smaller households, headed by older (52 years on average), less educated people (4.3 years) with little experience in participating in a farmers' group (0.9 years), and whose homesteads are located far from local training centre, are less likely to adopt this CLD pattern of improved cattle and fruits, therefore to earn less income and rarely apply manure.

9.5: Discussions and Conclusion

³ A person over 15 years old is equivalent to 1 adult equivalent (AE), 0.65 AE for over 5 to 14 years, and 0.24 for less than 4 years old.

In this study, five dominant CLD patterns were identified. Among them, a pattern of improved cattle and fruits (the CLD pattern II) was found to be associated with higher household income and more intensive manure use. This combination seem to have embedded incentives to integrate components through providing fodder and manure reciprocally within the farms, and their high economic return ensures that households invest in maintaining the fertility and sustainability of the resource bases they depend on. This finding confirms what Barrett et al. (2002) and others suggest about investments in soil conservation are not made in isolation with the preceding investment in portfolios of crop and livestock activities (Barrett et al. 2002; Place et al. 2002; Tittonell et al. 2005). The CLD pattern II can be interpreted as an integrative crop-livestock intensification pathway, not only welfare enhancing but also environmentally sustainable. Nevertheless, the quantity of manure applied in the study area is much lower than that in other studies while few inorganic fertilisers are used. For example, animal manure production by zero-grazing cattle in Kenya has been estimated at 1–1.5 t/animal (Strobel 1987 cited in Bationo et al. 2004). Manure use should be more encouraged for sustainable crop production.

In contrast to horticulture, the CLD patterns of staple crops with or without indigenous cattle have few incentives to apply manure. Especially for CLD pattern I, the staple crop serves to satisfy the food security needs of households, but the potential for using manure from indigenous animals has not been sufficiently tapped. It is probable that indigenous cattle are rather extensively grazed in open commonages and their dung is difficult to collect. Unlike the combination of improved cattle and fruits, this combination is a mere diversification without integration that has economic-environment trade-offs that lead to degraded resource bases.

Factors influencing the application of manure and more generally the adoption of soil conservation measures by poor agropastoralists in fragile ecosystems have attracted the attention of other researchers. How does the methodology of this study contribute to a better understanding of diverse interactions of crop-livestock components and their implications for income and manure management in relative to other studies? Other studies pay little attention to complementary relationships between crops and livestock (Clay et al. 2002; Freeman and Coe 2002; Place et al. 2002). As a result, their findings are often contradictory to mine. For example, Freeman and Coe (2002) suggest that in eastern Kenya farmers with larger livestock holdings were more likely to adopt soil fertility measures. They conclude that their result is not surprising because households with large numbers of animals should use more manure. On the other hand, my results indicated that it is not the number of animal holdings as the CLD pattern I of staple crops with indigenous cattle is less associated with manure application, but rather the degree of integration between distinctive crop types that determines intensified manure use. For extension services, it is more practical to understand which combinations of crop and livestock varieties contribute to sustainable development for agro-pastoral smallholders in mixed farming systems than it is to search for independent factors affecting adoption of soil management.

The finding from this study also highlighted that education and access to knowledge and skills through participation in farmers' groups and close access to the training centre appear to be crucial factors for households to adopt the CLD pattern II. Adoption of fruits and exotic cattle is

an extremely risky venture under a harsh semi-arid environment of the study area. Fruits require long-term investment as it takes some years to produce income flows to households, while exotic animals need much expertise in disease control (Conelly 1998). The following story of John Kigen who first adopted horticulture and exotic animals in Rokocho sub-location tells us that how education and access to skills and knowledge have allowed individuals to respond to development intervention and market opportunities.

John was born in 1963 in the upper valley near the escarpments. In 1986-1987 the year in which the AIC (a missionary) came to the valley, he inherited plots and cows from his father and came down to settle and establish a homestead in the upper valley. John was among the only two men completed the secondary education in his village and the first man to adopt horticulture, immediately after the training was provided by the AIC and its piped water line was put through the upper valley. It would take at least 3 years for fruits to flower, so for the first few years he planted tomatoes, cowpeas, sweet potatoes, and cassavas to earn supplementary incomes while experimenting to plant varieties of fruits, including pawpaws, mangoes, citrus, avocados, and bananas. John personally thinks that those people who could not adopt horticulture are not patient enough to implement long-term investment through diversifying income sources. By 2000, he shifted more focus on fruits, while no longer planting vegetables. He has been also interested in more intensive livestock management and kept the exotic animals that he bought, including 3 crossbred cows in 1997 and 5 dairy goats in 2001, within the homestead plot. For marketing fruits, transport has been a key constraint to John. Initially, he sold fruits to middlemen who transported them from Rokocho sub-location to larger markets such as Eldoret. But he gradually saw it unfair that middlemen took the half share of his profits. After 1999, he negotiated and started to sell fruits directly to a supermarket in Eldoret that pays him better rates, 6 times as high as those offered by brokers.

The following episode in turn indicates the process of dynamic social transformation in the study area to development, population pressure, agricultural intensification, gradual dissemination of technologies, competition and conflicts over resources from perspectives of individuals.

When John initially decided to plant fruits in 1986, his homestead in the upper valley was full of too many rocks on steep slopes for crops to be grown. He had to start building a homestead garden by removing rocks, burning and then cracking them into pieces so that these stones were rather utilised to make terraces. At the time John had only three neighbours and they saw John's practice not feasible at all. On the other hand, as time passed, more people have migrated from the highlands and escarpments in response to the infrastructural development in the lowlands, to the extent that John has started feeling the decrease in the volume of water in his neighbourhood. As John is now very successful, some neighbours try to follow his practice. Planting fruits requires a lot of intensive care. Fruits are very prone to wild animals, such as antelopes and porcupines, and especially to indigenous goats that cause a lot of damages. Fruits farmers often feel bitter seeing their long-term investment ruined by goats owned by neighbours. Many conflicts between farmers and livestock keepers have occurred since people started horticulture in Rokocho. As plot owners have start fencing their plots, some conservative pastoralists have migrated into other sub-locations in search for open commonages where horticulture is still rarely

practiced to avoid disputes with fruit farmers.

This Chapter identified heterogeneous CLD patterns pursued by households in the study area, and examined closely the households' socio-economic characteristics and capital assets affecting the adoption of more sustainable CLD patterns. It is indicated that households with high human capital asset endowments have responded to developmental and ecological challenges by adopting intensified agricultural methods. On the other hand, it is not certain whether the current trends will lead to sustainable rural development. For, well-off households adapt themselves to changing environment by diversifying into high-return farm/off-farm activities, but they are doing so quite independently, while still there are some poor households that tend to retreat in subsistence or to resort to extensive farming. Effective targeting is necessary to achieve sustainable community development.

Part IV

Discussions and Conclusion

Part IV: Discussions and Conclusion

Chapter 10: SYNTHESIS FOR THEORETICAL AND POLICY IMPLICATIONS

10.1: Synthesising the Findings from South Africa and Kenya

The major objective of this thesis has been to present a new insight into the peculiarities of African rural poverty and developmental challenges by examining the interactions between Africa's inherent geographic/socio-economic conditions and the impacts of greater exposure to wider social dynamics and increasing openness to the global economy through survey on recent research as well as empirical comparisons of rural livelihoods. Parts II and III then presented case studies from the former Transkei of South Africa and the Great Rift Valley of Kenya.

The case studies revealed that de-agrarianisation processes, i.e. their causes, directions, extents and impacts on rural development and agricultural intensification, have shown considerable variations between South Africa and Kenya, depending on local experiences of colonial histories, state policies, demographic and agro-ecological conditions. Nevertheless, it has also been found that de-agrarianisation and livelihood diversification in South Africa and Kenya have been similarly accompanied by the increasing social differentiation due to the heterogeneity in adopting distinctive portfolios of livelihood diversification strategies among rural sub-populations with differential accesses to non-agrarian assets, while the availability of remunerative livelihood opportunities has been limited in rural peripheries.

Synthesising the analytical results may contribute to deriving theoretical implications on agrarian change in the era of greater exposure to wider social dynamics and increasing openness to the global economy and policy suggestions for poverty reduction. The following sections compare the findings on the livelihood diversification patterns between the former Transkei and the Rift Valley households, especially in regard to the regional diversity in the causes and extents of de-agrarianisation (Section 10.2), the factors driving social differentiation in response to greater exposure to externally brought about risks and opportunities (Section 10.3), and the impacts of such off-farm livelihood diversification, de-agrarianisation and increasing social differentiation on rural social relations (Section 10.4), on which theoretical implications (Section 10.5) as well as policy implications (Section 10.6) are derived.

10.2: Factors Affecting the Extent of De-Agrarianisation

While de-agrarianisation seems to be a widely observed phenomenon across rural Africa today, its causes, directions, extents and impacts on rural development have been spatially and temporally specific, reflecting diverse local histories, state policies, and agro-ecological, demographic and political conditions. This section briefly summarises contrasting findings from the case studies of the former Transkei of South Africa and the Rift Valley of Kenya.

As examined in Chapters 4 and 5 of Part II, the causes of de-agrarianisation in the former homelands of South Africa can be traced to the colonial administration to establish migrant labour systems under the segregationist regime, in response to the rising demand for cheap African labour in response to the late 19th century mining boom and subsequent industrialisation. The white government ensured that the reserves, occupying merely 13% of South African land surface, could accommodate impoverished indigenous South Africans, accounting for 80% of the population, by preventing a few Africans from accumulating land within the reserves. Discouraged from investing in farming within the homelands, many adults sought jobs in the thriving mines, factories or white farms. The relative contribution of subsistence farming to rural livelihoods became increasingly marginal against remittances and other transfer incomes. Migrant remittances were rarely invested in either upgraded intensive agricultural technologies or soil conservation measures in the homelands. By the mid-20th century, the homeland agriculture had collapsed with seriously degraded soils and the homelands became net importers of staple grains from the South African commercial farming sectors.

Nevertheless, Chapter 6 revealed that migrant remittances had been necessary to maintain the operation of subsistence farming and to save in the form of livestock for the majority of rural households. When urban economies start contracting after the late 1970s, economic differentiation between those with or without regular incomes widened. A small number of established households kept investing in higher education for their children as well as in livestock, and a few even introduced a tractor to offer ploughing services to neighbours. In contrast, cash-strapped households with retrenched workers could no longer afford to cultivate their arable fields; they could only cultivate their home gardens while owning a few animals for manure. Today, under-farming is widely observed among poor households in the former homelands. As the democratised state welfare system is compensating the loss of remittance incomes, many rural households survive on old-age pensions, with which food and necessities are purchased. Otherwise, households headed by unemployed youth struggle to survive on casual off-farm income.

In contrast to South Africa, the Kenyan economy has been principally based on agriculture without strong industrial and state sectors, and the extent/impact of de-agrarianisation on rural livelihoods has been more modest and gradual. Nevertheless, as Part III revealed, off-farm income diversification has become a significant feature of livelihoods over the past few decades, even in semi-arid zones which used to be considered marginal areas, in response to infrastructural development. Increasing demand for cash incomes for education and consumption has necessitated agropastoralists either to expand their farming activities or to diversify into more profitable off-farm activities. Considering the fragile ecological conditions on which rural peoples depend in semi-arid zones, diversification into off-farm activities could contribute to sustainable

agricultural intensification.

Chapters 8 and 9 show that some households which had educated family members and access to training could diversify into regular off-farm income activities, adopt more intensive and commercial farming methods, and undertake sustainable soil management. However, due to limited availability of remunerative off-farm income activities, most poor households lacking the assets necessary to undertake productive farming were observed to open up indigenous forests either to make charcoal for selling or to expand arable and grazing activities without undertaking sustainable soil management. The differential dependence on natural resources among sub-populations, which are in turn closely associated with the differential access to remunerative off-farm activities, has caused serious governance concerns.

Different consequences of the diversification into off-farm activities on agricultural intensification, i.e. under-farming in the former Transkei and governance problems in Kerio Valley, have been attributed to local-specific historical backgrounds, state policies, market/infrastructure, and increasing social differentiation along with differential access to non-agrarian assets. The Kenyan situation may somewhat apply to rural peripheries in the eastern Africa (Evans and Ngau 1991; Freeman et al. 2004; Tittone et al. 2005), while the former Transkei case may look too extreme but be observed commonly across rural areas in the southern Africa (Francis 2000; McAllister 2001; Bank 2005; Eastwood et al. 2006).

10.3: Driving Forces of Off-farm Income Livelihood Diversification, De-Agrarianisation and Social Differentiation

De-agrarianisation has been accompanied by increasing social differentiation. This has resulted in under-farming in the former homeland community in South Africa, and raised concerns of agricultural intensification and governance of natural resources in the Rift Valley community. The local processes of social differentiation are thus spatially diverse. Exactly what has driven social differentiation in South Africa and in Kenya? Or, which factors have made rural sub-populations adopt heterogeneous livelihood strategies, i.e. high-return or low-return portfolios in response to opportunities or risks provided by de-agrarianisation processes? The analyses of livelihood strategies in South Africa (Chapter 6) and in Kenya (Chapter 8) indeed examined differential responses by rural sub-populations to social changes under location-specific institutional/environmental constraints, assuming that different households adopt different livelihood strategies according to their asset and access status.

To facilitate the analysis on the effects of the capital asset endowments of households on social differentiation, I attempted to identify dominant livelihood strategies in the particular local context and classify each household according to the typologies of the livelihood strategies. The criteria were chosen to capture local processes of social differentiation. In the former Transkei, the

contributions of diverse off-farm income activities and subsistence land-based activities to a household's wealth were chosen as criteria to reflect the heterogeneous reactions to South African social transitions by rural sub-populations. In Kenya, the sub-categories of farm and off-farm activities with different economic returns and resource management incentives were chosen as criteria to reflect diverse responses among rural sub-populations to the challenges of agricultural intensification.

The socio-economic characteristics of the five dominant livelihood strategy clusters identified respectively in the former Transkei community and in the Rift Valley community are compared in Table 10.1.

Overall, within a small area, there existed substantial inter-household heterogeneity in the adoption of livelihood strategies and the levels of assets. In turn, despite the differences in criteria to categorise households, there are some similarities in identified social groups in terms of their associations with household asset levels. For example, the well-off households belonging to cluster [E] in South Africa and cluster [5] in Kenya earned substantial portions of their wealth/income from regular off-farm income activities while also gaining some from crop-livestock activities. In contrast, the poor households that belonged to clusters [A] in South Africa and [1] in Kenya depended on low-return off-farm activities. Their heads were relatively young but less educated than their counterparts in clusters [E] and [5]. Among households headed by relatively old heads, clusters [D] and [4] households derived relatively more wealth/incomes from livestock/crop-livestock activities, their heads were more educated, and families were larger than those of households in clusters [B] and [2] with the oldest heads. Clusters [C], [D], [E] in South Africa and [3], [4], [5] in Kenya cultivated proportionally more land areas, while clusters [A], [B] and [1], [2] cultivated less areas.

These findings correspond to the general empirical observation reported by livelihood specialists that access to regular off-farm incomes, livestock and educational attainment most contribute to reinforcing social differentiation in rural Africa (Ellis 2000; Francis 2000; Bryceson 2002; Eastwood et al. 2006). While high-income earners redirect portions of their income to more lucrative activities and to investments in farming, the poor have little choice but to specialise in unskilled off-farm labour (Evans and Ngau 1991; Barrett et al. 2001a; Freeman and Ellis 2005; Bryceson 2005; Tittonell et al. 2005). While comparisons reveal substantial regional diversity, de-agrarianisation and social differentiation along differential access to non-agrarian incomes and assets seem to be a universal feature of contemporary rural Africa.

Table 10.1: Social Differentiation in Rural South Africa and Kenya

	cluster[A]	cluster[B]	cluster[C]	cluster[D]	cluster[E]
South Africa					
Activities	remittance/ casual	pension	remittance/ casual & livestock	pension & livestock	wage/ business & livestock
% of the surveyed hh	19%	25%	16%	26%	14%
estimated wealth(US\$)	583	968	2140	4750	4283
off-income(US\$, %)	523(90%)	921(95%)	455(21%)	1263(27%)	2463(58%)
estimated values of crop-livestock(US\$, %)	60(10%)	47(5%)	1685(79%)	3488(73%)	1819(42%)
age of the head	41	74	51	69	54
education of the head	5.2	3.2	6.3	4.6	6.5
family labour	5.7	7.4	7.2	9.2	8.1
land access(ha)	1.2	2.4	1.7	2.3	4.1
land use(ha)	0.3	0.6	1.1	1.5	3.0
	cluster[1]	cluster[2]	cluster[3]	cluster[4]	cluster[5]
Kenya					
Activities	specialisation in casual off-farm	Specialisation in traditional livestock	staple crop & traditional livestock	integration of fruits & exotic animals	specialisation in regular off-farm
% of the surveyed hh	34%	12%	11%	19%	23%
total-income (US\$)	527	680	1164	1374	2338
off-income(US\$, %)	380(78%)	149(17%)	253(19%)	319(30%)	1647(72%)
crop-livestock income(US\$, %)	146(21%)	531(81%)	900(80%)	1035(66%)	697(29%)
land rental(US\$, %)	2(1%)	1(1%)	12(1%)	20(4%)	0(0%)
age of the head	45	61	50	53	35
education of the head	5.5	2.7	4.6	5.2	10.9
family labour	3.0	3.3	2.8	3.8	3.6
land access(ha)	1.5	2.6	3.8	3.5	4.7
land use(ha)	0.4	0.5	1.9	1.3	1.0

(Sources) modified versions of Tables 6.3, 6.4 and 6.5 for South Africa, Tables 8.1 and 8.2 for Kenya.

10.4: Impacts of Livelihood Diversification, De-agrarianisation and Social Differentiation on Social Relations

Elsewhere in Africa, rural households have become more and more involved in off-farm activities and cash economies at various degrees. At the same time, it is reported that substantial mobility barriers to high return niches exist within the rural off-farm economy (Reardon 1997; Ellis 2000; Barrett et al. 2001a; Bryceson 2002; Ellis and Freeman 2005). In both rural South Africa and Kenya, though many households depend on off-farm activities, organised off-farm labour markets do not exist. Relatively high-paying formal employment opportunities are limited to a few civil servant, teaching, or development agency positions, while a few local elites are engaged in petty trades. In contrast, many rely on more temporal and far less remunerative self-employment options. This divide in rural off-farm economy is in turn reflected in that in farming; those with regular off-farm incomes are more likely to invest in farming while those without cannot afford to do so. These substantial barriers to high return niches within the rural economy both in off-farm and farm sectors, which are somehow related to ‘the lack of functional interdependence between rural households’, are another distinguishing feature of the contemporary rural poverty and underdevelopment in Africa.

Hyden (1980) regards the lack of functional interdependence between rural households in productive farming activities, relative to that in Asia and Latin America, as one of distinguishing features of rural social relations in African underdevelopment and argues that it has made forward and backward linkages difficult to develop in rural African settings. The reality is far more complicated than Hyden anticipates due to the effects of greater exposure to wider social dynamics and increasing openness to the global economy on rural social relations. To assess the substantive effects of off-farm income diversification, de-agrarianisation and social differentiation on the functional interdependence between rural households in both farm and off-farm activities in South Africa and Kenya, the social relations between the rural sub-populations pursuing the distinctive livelihood diversification strategies are examined below.

In South African case, as discussed in Chapter 6 and reviewed in the previous Section 10.3, the most important criteria to cluster households into groups pursuing similar livelihood diversification strategies were the contributions of diverse off-farm income activities on one hand and estimated livestock values among the subsistence land-based activities to a household's wealth on the other hand. Rural households in the former homelands were heavily dependent on off-farm sources for their cash incomes, reflecting the extreme extent of de-agrarianisation in the southern African peripheries. Most sources of the dominant off-farm incomes were of non-rural, non-local nature, such as migrant remittances, pension (state welfare system), salaries (NGOs/schools/offices), while business (self-employment, petty trades) and casual incomes (helping neighbours' domestic tasks, collecting firewood and grass) were of local nature but without much forward/backward linkages. In turn, subsistence livestock and crop farming has also lacked the functional interdependence between households. As discussed in Chapter 5, communal labour used to be practiced among neighbouring households by mutually exchanging labour, tools and draught cattle at the planting season, but these exchanges were organised at temporary bases and not formalised (McAllister 2001). Even such a communal labour practice became obsolete and has been replaced by the tractor ploughing service by wealthy villagers. Exchanging labour and tools between neighbours was no longer practiced in Lower Cala while

somehow maintained among poor households in Tiwane. Today, while livestock are owned by individual households, subsistence maize production is operated by family members of individual households who hire tractor service.

In Kenyan case, as discussed in Chapter 8 and reviewed in Section 10.3, rural households were found pursuing livelihood strategies with different economic returns and resource management incentives, either low-return portfolios of casual off-farm (charcoal making) with subsistence farming (drought-resistant/staple crops, traditional livestock) or high-return portfolios of regular off-farm (salaried employment/petty trades/urban migration) with commercial farming (fruits/commercial). Unlike rural South Africa under the influence of the strong capitalist and state sectors, the limited variety of off-farm income sources was available in the remote Rift Valley village. While regular/remittance income sources were accessed by the minority of households, substantial numbers of households were earning casual off-farm income by felling trees in the village and processing them into charcoal that can be sold at larger markets. On the other hand, as described in Chapter 9, in the study area crop farming has long been operated by individual households independently on plots while indigenous livestock owned individually have been grazed on unfenced areas, and the customary court has acted to supervise resource accesses and to mediate disputes between individuals. Recently, some households started undertaking intensive horticulture, but they managed most tasks for horticulture by family labour, while poorer households tend to exploit natural resources through extensive farming. Today, well-off households adapt themselves to changing environment by diversifying into high-return farm/off-farm activities, but they are doing so quite independently, while poor households tend to 'exit' or remain 'uncaptured', to use Hyden's (1980) terms, for survival.

Thus it appears that both in South African and Kenyan rural communities the functional interdependence between households in productive farm and off-farm activities was, and has remained, weak, while individual households independently pursue livelihood portfolios extensively diversified into off-farm income sources. In the former Transkei community, both in off-farm and farm activities, there have been no formalised divisions of labour in either subsistent farming or off-farm activities, for example, between the poorer cluster households ([A] remittance/casual, [B] pension, [C] remittance/casual & pension) and the relatively well-off cluster households ([D] pension & livestock, [E] wage/business & livestock), while each household has been heavily dependent on off-farm income sources of non-local (urban sectors), non-farm (state, private sectors) nature. In Kenyan Rift Valley community, too, there have been no formalised labour exchanges, for example, between the poorer cluster households ([1] casual off-farm, [2] traditional livestock, [3] staple crop & traditional livestock) and the relatively well-off cluster households ([4] fruits & exotic animals, [5] regular off-farm) while the poorer resort to exploitation of natural resources or retreat into subsistence.

On the other hand, negative impacts of de-agrarianisation on rural development are more pronounced in rural South Africa than in rural Kenya especially in regard to the vulnerability of the poor to external shocks. With the penetration of capitalism since the early 20th century, rural South Africans have long been regarded as proletariats while the distorted communal system, which guaranteed access to homestead plots, has worked as a 'smoke screen for the real extent of

proletarianisation (Hendricks 1990). Migrants may have kept faith in building family farms in the villages under the migrant labour system. However, with the structural unemployment that started in the 1970s-1980s, there has been a shift from remittances to welfare grants as the main source of rural income and a subsequent shift of functional families to female-headed households that neither farmed effectively nor received regular remittances from absent industrial workers (Bank 2005). Increasing social differentiation has led to the collapse of communal labour and of the economy of affection if they had ever been, and the young unemployed have found themselves extremely vulnerable to economic shocks and while not afford even to practice subsistence farming without inputs and implements.

Unlike South African counterparts, the Kenyan poor seem to have some more options for survival “outside the systems” (Hyden 2007), by retreating into subsistence or exploiting the nature surrounding them, thus by being ‘uncaptured or ‘exit’. However, because not only the poor but also the relatively wealthy have claims on common natural resources, survival strategies “outside the systems” by the poor raise serious governance concerns, while increased population pressure is expected to intensify competitions for such resources and to necessitate agricultural intensification.

10.5: Implications on Development Theories

While rural African individuals have become more involved in off-farm activities and cash economies, market forces have failed automatically to transform African rural agriculture. Rural villages have failed to consolidate driving forces of social transformation to stimulate rural labour markets and to create local on-farm/off-farm employment opportunities. The theoretical challenge of this study has been to understand an African exceptionalism in rural development. This section discusses the theoretical implications of the findings in search for a better framework to analyse rural poverty and underdevelopment in Africa.

Existent development models have perceived low levels of market development and consequent agricultural underdevelopment in rural Africa as geographically (Platteau 2000; Collier 2007) or historically (Akabane 2001; Hyden 1980; 2007) unique phenomena. Both formalists and substantivists try to rationally explain the causal relations between low levels of market development and agricultural underdevelopment, by either the population pressure or the social relation as a key determinant factor. For example, formalists/the population school claim that the functioning of markets or division of labour requires well-enforced property rights and trust in economic dealings, which are critically conditioned by the thickness of economic space that is indeed determined by population density. They argue that market development will remain very incomplete if populations are thinly spread over large areas of land as in many parts of rural Africa (Platteau 2000). In contrast, substantivists/the social relation school search for the structural determinants of African underdevelopment in African peasants’ behaviour embedded in personalised relationships with the affective ties based on common descent or residence, in which

investment in maintaining their position in community may pay off in the long run by expanding their potential claims on their risk bearing capacity. As a result, the pre-capitalistic production relations are being defended against the intrusions of the market economy while retarding the growth of productive forces (i.e. capital goods) (Hyden 1980; Akabane 2001).

Both existent formalist and substantivist models try to search for key determinants of rural market and agricultural underdevelopment in Africa in either physical/demographic conditions or peculiar social structures. Yet, causes of African poverty are much more complicated today due to the impacts of greater exposure to wider social dynamics. Off-farm livelihood diversification, de-agrarianisation and increasing social differentiation along with differential access to non-agrarian assets, which were attributed to colonialism, rural-urban migration and increasing openness of national economies to the global economy, have had considerable implications on rural market and agricultural development in the contemporary Africa, i.e. under-farming in South Africa and governance issues in Kenya.

Peculiarities of African poverty in the contemporary era need to be examined not only by examining the inherent physical/demographic or socio-economic conditions that have defined underdevelopment of market institutions, but also by assessing the considerable implications of greater exposure to wider social dynamics upon the inherent conditions. To do so, the existent develop models need to be modified and integrated beyond the methodological formalist/substantivist dichotomy so that they can deal with both social dynamics triggered in the response by rural households to risks and opportunities provided by greater exposure to wider social dynamics and their impacts on rural social relations.

On the analysis of social dynamics, it is natural to assume that rational individuals are not only risk averse but also responsive to externally brought about economic opportunities provided externally vis-à-vis rural institutions, as formalists do. Social dynamics are regarded as the result of the aggregation of the decisions of rational economic agents who manage risks while invest in private accumulation. Social dynamics are then accompanied by increasing social differentiation and conflicting norms among rural sub-populations due to their heterogeneous reactions to risks/economic opportunities provided externally, as the evidence from Part II on South African community and Part III on Kenyan community showed. Especially the penetration of the cash economy can greatly alter social norms that individuals should follow within African communities. As money is the most perfect means of economic calculation (Weber 1956), the increasing importance of the cash economy may accelerate the transformation process away from autarchy, than substantivists, Hyden (1980; 2007) and Akabane (2001), anticipated. The recollection of Mr. Bowen, a wealthy man in the Rokocho community in western Kenya, on his own experience of changing livelihoods, when I revisited the area to present the analytical results to the community leaders, was quite suggestive:

‘Today I find myself among the cluster [4]: integration of fruits and exotic animals, but a few decades ago I may have been among the cluster [2]: specialisation in traditional animals. In the past, I inherited sufficient plots and a large number of indigenous cattle and goats from my father as the only son. As traditional agropastoralists, I initially did not care about earning cash, and

subsisted on extensive grazing. As I pursued education (he later got a BA degree through correspondence), however, I gradually came to recognise the importance of planning and management. I was among the first villagers to open a local shop, to start horticulture and to introduce improved animals. I started recording the revenue and costs of the activities and planning investment in business and land, and encouraged my children to do the same. Recently, calculating the costs and benefits of livestock activities, I realised that it usually takes three years or more to raise an indigenous animal but it sells only at KSh 5,000 (US\$ 71). As indigenous cattle rarely produce milk, I leave them grazing in the lower valley. However, I can earn almost KSh 13,000 (US\$ 185) monthly from three dairy cattle by selling surplus milk to local kiosks, excluding the costs of feeds and medicines. Since I keep improved breeds at my homestead, I can recycle the manure to my fruit trees. As it is apparent that intensive farming is paying, early this year I sold several indigenous cattle and instead bought a new dairy cow.'

The methodological assumption that individuals are rational and flexibly responding to changing environment and norms could be universally applicable elsewhere in Africa and even in Asia and Latin America. On the other hand, this assumption does not answer why the divisions of labour and factor markets remain underdeveloped in Africa while the extents of de-agrarianisation are highly diverse across regions within Africa. As Weber (2003) suggests, we may be able to understand cultural and psychological norms of a particular society if we start examining its institutional foundations, but not vice versa; we cannot deduce forms of institutions from the assumptions on psychological norms. With rural markets under-developed, African rural social relations will remain key focus on the inductive research. The case studies indicated that de-agrarianisation and increasing social differentiation have led to individualising social relations and dismantling the economy of affection but not to deepening the divisions of labour between rural households in productive activities, as individual households have rather extensively been dependent on off-farm income sources of non-local nature (South Africa) or have retreated into subsistence or resorted to common natural resources (Kenya). Greater exposure to wider social dynamics and increasing openness of the national economies to the global economy promotes the involvement of rural villages into cash economies but simply increases their vulnerability to exogenous shocks, while failing to integrate driving forces of rural development and agricultural transformation through forward/backward linkages.

In summary, the empirical analysis of the peculiarities of African rural poverty requires a framework that incorporates the perspective of individual households who strive to cope with changes brought about externally through off-farm income diversification which in turn drives de-agrarianisation and social differentiation on one hand, and the assessment of their effects on the functional interdependence between rural households in productive activities on the other hand, by overcoming the methodological formalist/substantivist dichotomy.

10.6: Conclusion and Policy Implications

Deepening rural poverty, sluggish performance of the agricultural sector, accelerated resource depletion and environmental degradation in Africa have always concerned policy makers and researchers and urged them to search for effective research and policy tools (Kates and Dasgupta 2007). This dissertation has attempted to reveal peculiarities of contemporary African rural poverty and to examine how greater exposure to wider social dynamics has affected developmental challenges, through extensive survey of the livelihood literature and empirical comparisons of rural livelihoods of agropastoral communities in the South African and Kenyan peripheries to examine the extent of diversity between and within rural economies. This section concludes this dissertation with presenting the findings and by briefly discussing policy implications.

This study had two major research agendas. The first research agenda was to reveal the multi-dimensions features of rural poverty in the contemporary Africa. Low levels of the division of labour, underdevelopment of factor markets, and high household-level livelihood diversification, are among the dominant features of rural poverty in Africa relative to those in Asia and attributed to Africa's inherent biophysical, demographic and historical conditions. On the other hand, livelihood diversification into off-farm activities, de-agrarianisation, and increasing social differentiation due to differential access to off-farm incomes and non-agrarian assets are emerging features of the contemporary rural Africa. The interactions between these features; i.e., inherent features and emerging features in response to the greater exposure to wider social dynamics, have made rural development and poverty reduction in Africa complicated and challenging.

The second agenda was to enquire how greater exposure to wider social dynamics affects rural development and poverty in Africa. To answer this, it is necessary not only to understand the driving factors of the emerging features, especially livelihood diversification in response to risks and opportunities provided externally, but also to assess the impacts of such reactions, especially de-agrarianisation and increasing social differentiation, on rural social relations which was initially defined by Africa's inherent conditions.

On the analysis of the response to greater exposure to wider social dynamics, social dynamics are regarded as the result of the aggregation of the responses to risks and opportunities brought about externally by individual households who manage such risks while invest in private accumulation in economic opportunities vis-à-vis rural institutions. Heterogeneous reactions to such risks and opportunities by rural sub-population with different levels of asset endowments through the adoption of distinctive livelihood diversification strategies then drive de-agrarianisation processes and increasing social differentiation.

On the other hand, while individual households are rationally responding to external risks and opportunities and more involved in cash economies, rural villages cannot consolidate driving forces of social changes to stimulate agricultural transformation through market forces. The lack of functional interdependence between rural households in productive farming activities, relative to those in Asia and Latin America, has been a geographically and historically distinguishing feature of rural social relations in Africa, and possibly been attributed to Africa's inherent

physical/demographic and socio-economic conditions, by making forward and backward linkages difficult to develop in rural settings. The reality is far more complicated today due to the impacts of, off-farm diversification, de-agrarianisation and social differentiation, on rural social relations. Greater exposure to wider social dynamics promotes the involvement of rural villages into cash economies and individualisation of social relations, but not necessarily leads to deepening rural factor markets and stimulating local employment opportunities. Under such situations, markets remain underdeveloped and fail to become a driving force for agricultural transformation in rural Africa.

The case studies suggested that both in South African and Kenyan rural communities the functional interdependence between households in productive farm and off-farm activities was, and has remained, weak, while individual households independently pursue livelihood portfolios extensively diversified into off-farm income sources. On the other hand, negative impacts of de-agrarianisation on rural development are more pronounced in rural South Africa than in rural Kenya especially in regard to the vulnerability of the poor to external shocks. While increasing social differentiation has led to the shrinkage of the scope of the economy of affection, to which the poor might have been able to resort in the past, the unemployed have even not afforded to practice subsistence farming. In contrast, the Kenyan poor seem to have some more options for survival “outside the systems”, by retreating into subsistence or exploiting the nature surrounding them. However, survival strategies “outside the systems” by the poor raise serious governance concerns over common natural resources, while increased population pressure is expected to intensify competitions for such resources.

In general, across rural Africa, the poor have been identified as lacking capital assets, especially human capital, to adopt high-return livelihood strategies in response to risks and economic opportunities provided by greater exposure to wider social dynamics. Yet, the fact that rural households pursue diversified livelihood diversification portfolios may make the effectiveness of policy tools aimed at only the agriculture sector unpredictable. Instead, the following policy implications are derived from the micro-level findings.

First, rural poverty alleviation and promotion of sustainable agricultural development require meso-/macro-level policies encompassing the promotion of multi-sectoral development rather than focusing on agriculture. From a household/individual perspective, motivations to diversify income sources include risk management and economies of scope. My findings in South Africa and Kenya have shown that households diversifying into regular off-farm income activities are more endowed with human capital assets, especially education and skills, and also more likely to invest in agriculture and resource management. In contrast, households engaged in low-return casual off-farm income activities lack the assets necessary to undertake productive farming activities and thus have little incentive to manage resources properly. Diversification into remunerative off-farm activities appear to provide the necessary capital for farming and to reduce the risks arising from specialisation in farming. Therefore, meso-/macro-level development policies need to be multi-sectoral, encompassing education and farm and off-farm activities.

Second, community-level projects require effective targeting. Within a small community,

households are sharing physical, natural capital. In turn, my findings have revealed that the increasing social differentiation due to heterogeneous endowments in human and financial capital led to skewed access to and dependence on common natural resources among community members, while making customary practices that used to ensure coordination among community members either in communal work or in the management of common resources less binding and alienating the poor from the benefits arising from social capital. Projects aimed at enhancing the diversity and profitability of livelihood portfolios of the poor and at augmenting their capital asset bases may be more effective than efforts solely focused upon restricting access to common resources, as is often the case. Classifying households according to the dominant livelihood strategies in a particular local context can serve for efficient targeting.

In concluding this study, I stress the importance of more inductive research on rural African livelihoods. As rural livelihoods in Africa have been continuously changing, rather than searching for deductive models, inductive studies can not only facilitate the analysis of social changes from the perspective of households/individuals but will fill the empty spots in the knowledge of development and enrich models.

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