An assessment of multidimensional wellbeing in rural Rwanda: impacts of and implications for rural development and natural resource conservation

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ABSTRACT

This study applies a multidimensional definition of wellbeing, which includes material, social and subjective dimensions, to household level social research in rural Rwanda. Its contribution lies in applying the approach to three different fields: the study of cultural difference; natural resource management; and agrarian change, and in combining a wellbeing assessment with dominant theories or concepts in each.

Rwanda has received acclaim for meeting development targets despite high levels of poverty and population density. However, due to centralised, target driven policy, those impacts are contested and this thesis presents rare empirical insights from the perspective of rural inhabitants themselves.

The assessment of rural wellbeing forming the basis of three empirical papers reveals that many people struggle to meet basic needs for food, shelter and fuel. In contrast to development indicators, data reveal wellbeing to be falling among many rural households and inequality to be increasing, despite investment-driven health, education and security improvements. Far-reaching policies promoting rural and agricultural modernisation, alongside reconciliation between ethnic groups, appeared only to emphasize difference between groups, with outcomes of poverty reproduced for those with little relative power.

The Twa, an indigenous people, suffer acute difficulties, exacerbated by reduced forest access. However application of a framework combining wellbeing and ecosystem services reveals that a landscape approach to natural resource management could realise synergies between local resource needs and conservation of biodiversity in Rwanda's rich tropical forests.

The pervasive and authoritarian nature by which development targets are pursued, for example enforcing rural villagisation, has resulted in a perceived loss of freedom, which inhibited local systems of knowledge, labour, trade and social interaction. While such consequences are commonly overlooked, more holistic approaches such as this enable interpretation of complex interrelated systems and promote awareness of local perspectives, with critical implications for the design and assessment of development policy.

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1. INTRODUCTION

1.1 Context of the study

This study utilises a multidimensional definition of wellbeing to illustrate some of the complexities in the lives of rural inhabitants in Rwanda. The contribution of this study is to apply this multidimensional or 'social' wellbeing approach to different fields or sectors and to combine them with the dominant concepts or theories in that area of research. By doing so the research provides relevant insights for the design and assessment of development interventions. Because this study also focuses on people living adjacent to biodiverse tropical forests, it also presents recommendations for natural resource management.

Despite the multitude of attempts to improve the lives of others in remote corners of the developing world, limited understanding of the complexity of people's wellbeing proves a barrier (De Haan and Zoomers, 2003, Tendler, 1997). More objective or aggregate measures of a person's wellbeing, particularly those focused on material wellbeing tend to homogenise people and reduce their actions to those of standardised, rational actors all seeking to achieve the same ends. In the absence of adequate means to demystify the complexity of rural lives, both the design of interventions and attempts to assess their impact may fall short of their potential to transform people's lives, reduce poverty or to adapt to more effectively meet the needs of intended beneficiaries (Gough and McGregor, 2007). Large scale development policy may be implemented which overlooks the context of populations and the potential harm that policies may do to their way of life, an oversight which allows the cycle to be repeated (Ferguson, 1990), which for many introduces an ethical issue to the implementation of development measures (Gledhill, 2000).

Tania Murray Li (1999, xvii) describes the problem succinctly in reference to upland populations in Indonesia, suggesting that:
"*assumptions…..have been central to the construction of visions of "development", both conventional and green varieties. To the extent that they ignore uplanders' historical experiences and current aspirations, "development" policies and programmes produce results which are often problematic, if not actually perverse."*

Social science may offer methods for understanding complex rural contexts, which for a number of reasons are frequently applied to research but are seldom utilised in development practice. This introduces an additional nuance to the problem. Development is a profession, a global part of the services sector as much as it is a field of research or academic discipline. The design of projects often involves a technical rationality based on the knowledge of development professionals, rather than the knowledge and practices of those to be developed (Kothari, 2005). But additionally, this professionalism means that methods for scoping and for impact assessment must be easily professionalised: cost-effective, easily interpretable, implementable, repeatable and readily translated into easily absorbed results relevant to a project's aims, such that 'ideal types' (Weber et al., 1971) can be drawn. Such approaches may be effective in certain sectors such as where investment in basic services such as water or health care is lacking. And many locally based, small scale development initiatives do not suffer from such limitations in contextual understanding. But many other sectors involving greater complexity and local particularities are the subject of broad-scale, blueprint policies. And by judging those policies only on the basis of the limited goals of the implementing organisations, development has been seen to perpetuate and supports a particular type of approach, enabling reinvention of policies based upon that repeated limited understanding (Mosse, 2008). The dominant assessment methods may be considered to be 'confirmatory', limiting the scope of their findings to expected or desired outcomes, as opposed to more 'exploratory' approaches which may be open to unexpected and even undesirable impacts (Copestake, 2013).

Much development planning relies on simplified narratives, which have been considered to be comparable to persistent folktales (Roe, 1991). Apthorpe and Gasper (1996, 9), describe the nature of such narratives: "*A problem (often a 'crisis') is encountered; it will be 'solved', through the epic endeavour of a hero (the project/policy), who faces and overcomes a series of trials (constraints), and then lives happily ever after. Employing this story line near-guarantees disappointment. But, like some religion, it thrives on disappointment: its many versions endure precisely because of widespread felt needs for simply grasped, generalised stories with an inspirational 'message', with which to interpret and respond to situations that can otherwise seem bafflingly complex, variable and 'other'.*"

But such policy framings do not persist due to limited capacity among development practitioners. Improvements in the lives of poor people are not the only goals of policies which may be labelled as ‘development’ policies. Those policies reflect the wider objectives of numerous actors including both national and foreign states, and their religions and cultures (Kothari, 2005). To swiftly lay bare and problematize the profession, the professionals and institutions driving the aims of policy and assessment of results are not value free entities seeking to improve the lives of others as others wish to be improved.

Development policies tend to focus on large scale, narrow economic goals of growth in GDP per capita or reduction in income based poverty. Political reform or environmental goals are often subordinated and social and cultural differences overlooked. Yet goals of economic growth are not prioritised due to the heavy reliance on evidence-based approaches but because growth is considered to be crucial to national and international interests, and may incidentally act as a vehicle for poverty alleviation. The Millenium Development Goals represent a major departure from income measures of poverty and aim at reducing a number of different dimensions of poverty, such as the aim to halve hunger by 2015. But one of the major methods put forward to reduce hunger is by promoting growth in national agricultural sectors by the increase of exportable goods (Easterly, 2009, Dercon, 2009). The result of this assumption has been that the change in policy rhetoric towards poverty alleviation has counter-intuitively caused little change in strategic approaches to land tenure and agriculture in Africa, which continue to focus strongly on free markets for land transfer and national economic goals (Peters, 2009, Hickey, 2013). The pursuit of growth is often attributed to the interests of foreign states and the role of international institutions such as the World Bank and must be considered in policy framings. Although development is also sought by national governments and other actors within developing countries, foreign influence in development (and in biodiversity conservation) has endured for many years. Africa, for example, is not distinct from the global interactions which occur between nations and has traded for centuries with Europe, building a shared history that has influenced current politics and the very way in which states are established (Bayart, 2000, Hagmann and Péclard, 2010).

Economic growth is commonly believed to be and is pursued as the pathway to poverty alleviation, to improve a population's wellbeing. Yet the pursuit of economic growth is not considered to be synonymous with improved wellbeing among poorer members of society (Easterlin, 2003). Such aggregate measures of people and of their wellbeing tend to overlook both what people themselves consider represents a meaningful life and the factors, processes and interactions involved in people moving into or out of poverty.

Nussbaum (2003, 211-212) articulates the inconsistency between growth and development very clearly:
"*All over the world, people are struggling for a life that is fully human, a life worthy of human dignity. Countries and states are often focused on economic growth alone, but their people, meanwhile, are striving for something different: they want meaningful human lives. They need theoretical approaches that can be allies in their struggles, not approaches that keep these struggles from view…. Research shows clearly that promoting growth does not automatically improve people's health, education, opportunities for political participation, or the opportunities of women to protect themselves from rape and domestic violence. So if we want to ask about how (an individual) is doing in an insightful way, we need to determine what she is actually able to do and to be. It means crafting policies that do not simply raise the total or average GNP, but promote a wide range of human capabilities, opportunities that people have when, and only when, policy choices put them in a position to function effectively in a wide range of areas that are fundamental to a fully human life*."

The simplification of problems, complex relationships and social phenomena has often led to weak policy prescriptions, unequal distribution of benefits, and short term outcomes over the long term achievement of realised and perceived improvements in the lives of rural populations (Roe, 1999). Another frequently pursued development goal which has had mixed results is the drive to modernise rural areas considered to be 'backward', which lack market integration and are seen to function on a subsistence basis (Hyden, 1986). Yet there is a lot of expertise and experience of what works in development. Interventions tend to achieve better outcomes for intended recipients when they are customised to context, recognise the heterogeneity of people and their needs, involve local people in designing

them, and allow space for harmful impacts to be recognised and adaptation to occur (Tendler, 1997).

A major challenge to be addressed is to bridge the gap between rigorous anthropological research in developing countries and the reduction of people's lives to objective indicators which is common in the development profession to guide intervention and impact assessment (Peters, 2004, De Sardan, 2005a). For as long as development interventions have occurred, ethnographic work has sought to understand cultures and motivations and different ways of thinking about what comprises a satisfactory quality of life, yet it has seldom been utilised to devise development interventions. However, Kaag (2004, 59) notes a change in the way development is enacted which may lead to a considerable and mainstream role for new approaches: *"While top-down approaches to development which are 'objectivist' in overlooking participants' perceptions and 'paternalist' in prescribing policy selection and how it is implemented are still common, there is an increasing trend towards seeking more meaningful, locally-grounded understandings of vulnerability, poverty and exclusion."* For example the UK Department for International Development has recognised that experimental and statistical methods "*are only applicable to a small proportion of their current programme portfolio*," and that study designs embracing trade-offs and complexity are required (Stern et al., 2012). The opportunity for this improvement is therefore increasing with the realisation that long-term development success has lagged far behind the potential and that the limited attention paid to context, culture and relational factors has been a contributory factor.

This thesis contributes and responds to these debates by seeking to bridge the gap between approaches aiming to explore the complexity of the lives of individuals living in developing countries and reductive, strictly quantitative approaches which seek to represent generalizable relationships and effects through focused indicators. Rather than relying on objective indicators or deterministic definitions of what elements of rural inhabitants' lives should be prioritised, this study applies a more holistic approach to a complex rural context in western Rwanda, one which development policies are having profound and contested effects upon. Attention is paid to the relationship between the researcher and participants so that the values and perceptions of local inhabitants are highlighted

rather than the knowledge or preconceptions of others. This broad approach provides a detailed and fine-scale understanding and also builds counternarratives to the dominant approaches in development research. However material indicators and the generalizability of results are not cast aside in the study which also seeks to draw meaningful patterns and trends out of the complex context described.

1.2 Rwandan context

Rwanda is an extremely pertinent example to use in exploring the complexity of rural wellbeing. It is a country of some 10 million people with a rapidly increasing population, especially as more refugees return from neighbouring Burundi, Tanzania, Uganda and especially the Democratic Republic of Congo (DRC) (NISR, 2007). The overwhelming majority of Rwandans are small-scale farmers practising subsistence agriculture on an average of just 0.7 but with high levels of inequality in land tenure (REMA, 2009). The prevalence and extent of poverty are severe: Over 70% of rural inhabitants can be termed multi-dimensionally poor (OPHI, 2013) and more than 50% of children under the age of five suffer stunting through malnutrition (WFP, 2009). However, although these few statistics provide some insight into the difficulties faced by rural Rwandans, they foreshadow the complexity and variation evident in the population. Rural Rwandans could not meaningfully be labelled as smallholders trying to subsist on small plots: in this study more than 25 different income streams were identified. Materially there is great inequality in Rwandan society with people of very different social standings living alongside one another. And more than 10% are landless labourers who may rely on others to survive through times of little work and food (REMA, 2009). The histories and ethnicities of people vary greatly along with their values, practices, priorities and aspirations (Ingelaere, 2010, Thomson, 2009). And their ways of acting to pursue wellbeing are altering and becoming more diverse as rapid national and global scale changes affect them (Ansoms and McKay, 2010). This variation and complexity demands an inductive approach open to a variety of perspectives and ways of thinking and acting.

As will be detailed in the subsequent papers, Rwanda has undergone rapid change, particularly since the dire situation of the mid 1990s when ethnic division led to genocide and devastation of the country's institutions and

economy. From the perspective of Rwandans, both within the country and in exile, this meant civil war, loss of family and relatives, displacement of people on a massive scale, years of physical and economic insecurity, acute levels of poverty and hunger and a very uncertain future. 18 years on those same people could surely not have considered that, under the strong guidance of the Rwandan Patriotic Front's Paul Kagame, the main themes about Rwanda in international media, development literature and academic research would be not only of triumph in restoring internal security, but of a global leader in poverty reduction and economic development (IMF, 2011, UN, 2013, OPHI, 2013).

However, although dominant, these descriptions of Rwanda's upward trajectory are not unanimously upheld. The method of achieving these outcomes has been through a large number of centrally imposed, strongly enforced and economically focused policies (Gready, 2010). A reconciliation policy has eradicated use of the ethnic terms 'Hutu', 'Tutsi' and 'Twa' such that all citizen are deemed Rwandan (Purdekova, 2008)(see section 3 for more detail about these ethnic groups). As Pottier (2002, 10) ominously views this policy:

"The screening out of complexity and context are techniques that work best in situations where confusion – about people's past, their identities, their rights, has been institutionalised and built into the fabric of everyday life."

The vision for what a new Rwandan should be and do is repeated often through various media and many of the virtues put forward lie in realising economic potential (O'Connor, 2013). Land tenure, although now effectively formalised, has been placed firmly in the hands of the government, land types have been strongly delineated and uses on those types of land have been strictly determined and controlled (Pritchard, 2013). Though elections were held in 2003 and 2010, no noteworthy opposition was allowed to receive any votes and Kagame secured over 90% of the vote each time (Reyntjens, 2011). Despite some temporary delays in aid support due to concerns over Rwanda's support of militia activity in the neighbouring Kivu region of DRC, Rwanda is one of the best supported recipients of aid from the developed world. However Rwanda represents a controversial and polarising example for research and development communities (Clark and Kaufman, 2008, Longman, 2011). The lack of consensus about the

implementation and impact of development policies is exacerbated by the lack of monitoring and evaluation of them (Holvoet and Rombouts, 2008).

While relatively little empirical research has been carried out in Rwanda, there is a considerable body of literature which is critical of the Rwandan government's policies. Many of these studies provide very robust analyses (see for example Ingelaere, 2010), however there are examples of very strong conclusions having been reached based upon limited data (Ansoms, 2011) or which use concepts leaving little room for alternative views such as 'resistance' and 'hidden transcripts' (Begley, 2011). It is in part due to the polarity of views about Rwanda and the trajectory of its people that I have selected to use a relatively holistic concept which can provide insights regarding both positive and negative change. The aim of this thesis was to conduct research with implications for development, to avoid ideological bias and generalisation of the complexities of social phenomena.

1.3 Aims and overarching concept

The research aims to provide empirically rich data about the lives of rural Rwandans. The study involves the application of a recently developed multidimensional concept of wellbeing to that complex rural context. The wellbeing definition employed in this study was developed by researchers from the Wellbeing in Developing Countries Research Group at the University of Bath (hereafter WDC approach) and is described briefly in the following section and in greater detail in section 2, the paper covering methodology.

Wellbeing is conceptualised to comprise interrelated relational and subjective dimensions in addition to the material aspects (White, 2009b), which so often form the focus of attempts to describe people's lives. The valuable contribution of the definition put forward was to focus on the key elements which may differentiate between people or groups of people based on what they have (both tangible and intangible resources), what they can do (meeting basic needs, accessing resources and satisfying further goals) and how they feel about what they have and can do (through relations with other people and institutions, the shared meanings and practices they have developed and through their own individual agency) (McGregor et al., 2009).

The WDC definition has already been applied to practical research in several countries and contexts (Copestake and Camfield, 2009). The focus on subjectivity and individual variation is also very suitable for finescale analysis at the individual, household or village level. This is also the most suitable scale at which to analyse questions of the impacts of development (De Haan and Zoomers, 2003, de Sardan, 2005b). Despite this, some of the small volume of wellbeing research conducted so far has focused on large scale comparisons between countries incorporating quantitative indicators of some of the concepts described (Copestake and Camfield, 2009). The methods to apply the concept of wellbeing are far from defined and are also context-specific. This study therefore also aims to contribute to the development of the wellbeing approach for research and development practice.

The concepts and definitions of the WDC approach are applied here to explore local perspectives on a number of different policy domains or issues. The novelty of this thesis is to combine this multidimensional definition with other influential concepts in social, political and environmental sciences and present empirical data on each from fieldwork in rural Rwanda. Here wellbeing is:
a) compared methodologically to the sustainable livelihoods framework (Scoones, 1998).
b) explored in combination with ideas about different forms of power (Lukes, 2005) and Bourdieu's theory of practice (1977) to consider the effects of relational and subjective wellbeing in determining the outcomes of different individuals and groups.
c) presented in a conceptual framework along with the concept of ecosystem services (a recently popularised term to represent the flow of benefits humans draw from ecosystems (Ehrlich and Mooney, 1983, Daily, 1997)) to consider the contribution of ecosystems to the wellbeing of rural populations.
d) applied to the study of agrarian change in order to critically analyse the dominant agricultural policies, framings and the theories which guide them.

Debates in each of the research and policy domains addressed, surrounding cultural difference, ecosystem services and agrarian change are dominated by simplified and often economic approaches. The wellbeing assessment does not result in simple comparable numbers or a simple

message to be quickly absorbed. Every effort is sought to avoid generalisation across the sample and wider population, to consider variation and exceptions to the patterns which emerge. This thesis therefore aims to present some of the main elements of and changes in wellbeing and to use the concepts discussed to elucidate that complexity. The ultimate aim is to provide improved insights into the wellbeing of rural inhabitants in order to reveal implications for the design and assessment of interventions to improve the lives of rural inhabitants.

1.4 Research questions

1. How do rural Rwandans conceptualise wellbeing?
2. How do material, relational and subjective wellbeing differ between households, places and to what extent can different groups be identified?
3. What resources, both tangible and intangible, are important for households in meeting their basic needs and satisfying particular goals for wellbeing? How does this differ by household and by area?
4. What changes have occurred in the last ten to fifteen years and how have they affected wellbeing at the household level? What are the main political, economic, environmental or social drivers of those changes?

1.5 Field sites and overview of methods

The west of Rwanda is a seemingly endless sequence of hills, mountains and valleys, primarily converted into a patchwork of small fields of varied crops with patches of forestry among them. The hills and mountains progressively fall away to relatively flat savannah to the east of the centrally placed capital, Kigali. This study took place in three sites in mountainous western Rwanda between October 2011 and May 2012. Of the three research sites, one was in the district of Nyamasheke in the southwestern corner of Rwanda, one in Nyamagabe district further to the east in southwestern Rwanda and one in Rutsiro district in the northwest of the country (Figure 1.1). The three study areas within those districts were selected because they varied in a gradient of remoteness and were also far enough apart that regional differences could be explored based on administration and institutions and also culture and history. The Nyamasheke site was the least remote. It lies alongside a main highway

from DRC to Kigali, with a large tea plantation and tourism infrastructure providing jobs, and was less than an hour by bus from a large town with further trade opportunities. The Nyamagabe site was the most remote, being several hours walk from the nearest town with only very poor, unpaved roads and no public transport. The site in Rutsiro, in the northwest was relatively remote, being two hours from the nearest town by an irregular bus service, with no paved road and few employment opportunities.

The three sites were also selected because they were all adjacent to areas of native tropical forest. The initial premise for this study was to explore the ways in which a variety of different natural resources, including the goods and services provided by tropical forests, contribute to the wellbeing of rural populations and so the research sites shared this common attribute. This relationship is explored in section 4. The Nyamasheke site sits on the western edge of Nyungwe National Park (Nyungwe NP), a 1,000km^2 protected area. The Nyamagabe site is on the eastern boundary of the same National Park. However the site in Rutsiro district borders the comparatively miniscule Gishwati Forest, which in the 1970s was of comparable size to Nyungwe NP and previously connected to it, but which has become a small, heavily deforested, isolated patch of, at its minimum extent in 2002, just 6km^2 (Plumptre et al., 2007). Both areas of forest are now heavily protected and their role in the lives of people living alongside them may not represent such a large difference to other rural areas in western Rwanda.

Rwanda consists of 30 districts (Figure 1.1), which are then divided into sectors, cells and villages. Villages typically contain between 100 and 200 households. Cells contain on average seven villages. While villages each have a local chief, the cell has an executive, government appointed administrator. The sector is the next administrative level, consisting of on average four to five cells. Rwanda's 30 districts (other than Kigali) then contain an average of fourteen sectors (NISR, 2012). The district mayor has authority over regional matters but decision making is subject to authorisation at a higher level through central government. Rwanda is a small country and information passes very effectively such that even seemingly trivial matters are handled by the central government and each district is very consistently governed with, in contrast to Rwandan history (Vansina, 2005), only small regional differences (Ingelaere, 2011).

Within each of the three study sites, a number of villages, adjacent to one another, were selected to provide a representation of the variety of social, economic and cultural groups present. The names and locations of villages were not pre-selected but rather was a decision taken after several weeks had been spent at each site regarding the suitability of individual villages and the number of villages required to adequately represent the variation present in the population of that area. Each village of between one and two hundred households in this region often comprises just one or two hillsides of clustered houses, and the inhabitants may be quite distinct from the next hillside. Neighbouring villages may contrast strongly based on the history, religion, ethnicity, land use, economic activities and wealth of their inhabitants. The aim was not to choose a sample population which was deemed to represent proportionally the wider rural population, but to encompass the variation present in the population of the region. In all sites, selection of only a single village would have provided a very poor representation of that variety.

The names of the eight selected villages and participants have been anonymised, partly to aid differentiation because their Kinyarwandan names may appear quite similar to English speakers, but also for ethical reasons, because during the course of the research participants may have discussed activities which are illegal and may lead to action by authorities and also some opinions presented were divergent from those of the Rwandan government and could potentially also lead to repercussions. In the case of both interviews and focus groups consent was sought verbally and recorded in writing. Respondents were informed that participation was entirely voluntary when notified a day ahead of our visit and again when we returned to conduct the interview or focus group. Participants for focus groups were randomly selected from the subset of households which had been randomly selected for interviews. Focus groups took place in recognised meeting places within each village.

In both Nyamasheke and Nyamagabe districts sets of two villages were considered to represent the observed socio-economic variation sufficiently. In Nyamasheke, the most connected site with highest employment opportunities, village A straddled the main highway and provided a focus for economic activities and trade as vehicles stopped to purchase food, charcoal, wood and other items. The village also housed the headquarters of Nyungwe NP, so there were several tourist lodges and frequent transport

links. The nearby, long-established tea plantation also provided many jobs and, alongside tourism, was a key factor in the attraction of many migrants from other parts of Rwanda to find work. Village B was strikingly different: much more rural in nature, with no tourist infrastructure, very few migrant workers and very limited trade buildings, though people still benefitted from the possibility of trading crops and finding employment in the adjacent tea plantation. In Nyamagabe, village C was inhabited by long-term residents relying on agricultural opportunities for work. However, trade opportunities were very limited to local transactions. The neighbouring village, village D, was notably more diverse in its inhabitants. The village was conspicuous for the number of modern brick buildings, evidence from a discontinued development program initiated by the European Union in the 1980s and early 1990s. A proportion of households had been enticed to the area by the land, housing, livestock and work opportunities provided and were clearly more materially endowed than the majority. The rest of the village comprised some long-term inhabitants, but, predominantly on a separate hillside, also a large cluster of small houses which homed a mixture of returnees from the DRC who had been resettled here after their initial Rwandan settlements had been adversely affected by landslides and flooding. Alongside them, in houses vacated by returnees from DRC who chose not to stay in this isolated environment, were a smaller number of Twa who had been brought to the village and provided the houses by local authorities to improve their living standards. In Rutsiro, the extent of segregation of groups was such that four villages were selected rather than two. Village E was constructed in the late 1990s and consisted almost entirely of returnees from DRC who had been provided with land and housing to aid their resettlement. A small commercial centre serving the surrounding village had been established in village E. Village E was flanked by villages F and G, which consisted almost entirely of long-term resident farmers. Those two villages differed in terms of economic activities and farming practices as those in village F, mostly at higher altitude grew different crop mixes and much employment revolved around charcoal making and plank sawing. Those in village G were more occupied with cultivating and were able to grow bananas and sugar cane in abundance, which they traded with those living higher up who would grow potatoes and other crops in their place. Village H was entirely different to any of the other villages, with the majority of inhabitants being Twa who had either been removed from Gishwati forest to live more conventional lives outside of it,

or Twa who had been drawn to the area from other parts of Rwanda to join them.

Therefore of the eight villages visited in this study, A and B were in Nyamasheke, C and D in Nyamagabe and E, F, G and H in Rutsiro district. In each of the eight villages one focus group and between fifteen and thirty semi-structured interviews were conducted. This sampling method provided eight focus groups and 165 household interviews in total. The number of interviews conducted in each village was derived from the overall number of households, which was determined from lists of households and occupants maintained by village chiefs or cell administrators. Households were selected at random from that list for interviews which all took place in the participant's house. To provide a representation of the variation present within the population of each village, I aimed to sample approximately 15% of households in each village. This was achieved in all but two villages in which interviews were completed in 12% and 14% of households (Table 1.1).

Table 1.1. Number and percentage of households at which interviews were conducted by village.

Village	Number of households	Number of interviews	Percentage of households interviewed
A	126	20	16%
B	176	30	17%
C	170	20	12%
D	120	20	17%
E	121	20	17%
F	133	20	15%
G	127	20	16%
H	107	15	14%

Although I had taken strides in learning enough Kinyarwandan to engage in conversation, I was also not alone in conducting the research and used a research assistant, a recent graduate from the National University of Rwanda in Butare, who himself had grown up in a rural area in western Rwanda. The assistant acted as a translator during interviews and a facilitator of focus groups. Transcripts were then normally input into a computer the same evening with any ambiguity being clarified while still fresh in the memory. As part of the project I also supervised the theses of

three undergraduate students at the National University of Rwanda. Thirty of the 165 interviews were conducted, after training, by one of the three students, alongside the research assistant.

The material presented is not intended to constitute a comprehensive wellbeing assessment but aims to focus on the areas of people's lives with the greatest implications for the design and assessment of development policy. A study of such a multidimensional definition of wellbeing lends itself to studies beyond quantitative measures and either mixed methods or qualitative studies are required to fulfil the data requirements of this broad, interdisciplinary and non-deterministic scholarship (Alkire, 2007). The methods were designed to explore local priorities and conceptions of wellbeing in an inductive way, by talking to people in their own homes about their lives.

Although households were selected at random and the scale of research is described as 'household level', interviews were conducted primarily with an individual: either adult male (mostly considered household head) or adult female in that household. As such household priorities and activities were discussed but the perspective of the individual was the one considered. Overall 42% of respondents were male, 58% were female and 19% of households had only a female head of household. Both myself and my research assistant were male and this may have influenced the likelihood of some female respondents bringing to the fore issues of gender inequality which influenced their individual wellbeing. This possibility was considered through interviews and focus groups and attempts made to ensure that adequate space was given for gender issues to emerge. Through the course of interviews female respondents did confide information regarding issues of health, the impacts of polygamy and occasional issues of unequal control of assets and it does not appear that gender issues were subordinated due to any oversight of or lack of space provided to their inclusion as part of the wellbeing research conducted.

Mixed methods, incorporating both quantitative and qualitative elements are increasingly being applied to poverty research (Shaffer, 2013) and impact assessment (White, 2009a). Conversations with respondents in this study contained a mixture of very open questions, allocation of space to explore topics considered important to the participant themselves, yet efforts were made to also consistently discuss at each interview a number of domains of life including health, education, land use, culture,

occupations, social relations among others. When researching areas of life which required complex detail (for example trying to ascertain the number of income streams for a household) or which could be considered more abstract topics such as culture, multiple questions were used to elicit detailed responses or to allow for verification and additional detail to emerge. This was often found to be essential as first responses provided incomplete or limited responses.

Here I use culture as an illustrative example of the way in which interviews were conducted. Culture was initially approached very broadly by asking "What do you think are the important elements of culture for your family or in the village here?" Depending upon the response further questioning could consist of "How has that changed over the past ten to fifteen years?" or "what does Kinyarwandan culture mean for you and your family?" This could be further developed to ask "Are there any specific practices you engage in which you would consider have cultural meaning?" and "Are there specific items you use which have a cultural significance, particular places you go to, materials you collect or use?", "What is their importance to you or others who use them?", "How has that changed, why and what effect has that had?" Additionally at other points of the interview, when discussing particular habitats such as forest or types of land use and farming practices, questions would again revisit culture, asking "Is that something people have done for a long time here and do other people here or in other places do similar?", "Is that something you have decided to do yourself or is that common practice here?", "Why do people choose to do that and how do people learn how to or acquire the knowledge to do that?", again "How has that changed over time, why and what has the effect of that change been?" However, topics such as culture were not addressed by these questions in isolation. Other open questions asked at each interview about aspirations and ways of acting to achieve them could again link back to cultural values and practices, such as "What are the main things you wish to change for you or your household", "Why and what will that enable you to do, what will the effect be for you and your household?" and "How able do you feel to be able to make those changes and why or why not?", "How does that differ with your past aspirations?", "What are the main concerns for you and for your family or members of your household?", "How has that changed over the past ten to fifteen years?", "How able do you feel to deal with those concerns and why?", "Who or what can help you to meet your aspirations or overcome those problems?" In this sense the

subjective themes of culture, social relations and individual agency were continually explored simultaneously with different domains of people's lives such as health or land use and were also revisited several times over the course of an interview. Additionally the nature of changes which had occurred, their causes and effects as experienced and perceived by the participant were explored. This open style of questioning allowed me to refrain from specifying institutions, from asking directed questions about government policies or ethnic identities and specific relationships or security concerns which may have been met with discomfort and suspicion. Furthermore topics including security and ethnicity were specifically mentioned as being forbidden under my research permit and though not directly addressed in questions, could still be addressed if they were deemed important by the participant themselves. For data analysis the specific themes such as culture needed then to be drawn out of interviews not from a single answer to a question but from numerous answers throughout each conversation.

Steps were taken as part of the research to spend sufficient time in the research sites to interact with people prior to interviews to allow participants to understand the reasons for this project, the scope of the work, motivation for it and likely timescale and outcomes to be expected. Detailed introductions were given before each interview to clarify these points. This approach ensured that the vast majority of participants appeared comfortable to talk openly about different aspects of their lives. The research approach and issues of researcher positionality are further detailed in the next section.

Alongside this open conversation, concerted efforts were made to support the large array of qualitative data with consistent quantitative data about each of the 165 households in the study: including the demographic and socio-economic characteristics of people within each household, their resources, education, occupation and land practices, their ability to meet specific basic needs, and the ways in which they had changed over the past ten to fifteen years. The interviews could therefore most accurately be considered 'semi-structured'.

The time period of ten to 15 years was selected for two reasons. Firstly, an understanding of changes taking place in rural communities requires an analysis of change over more ten years or more, with any less unable to reveal meaningful patterns (Berry, 1993). And secondly, any greater time

period would have taken the focus of study back to 1994. Researching the events occurring during the genocide was not the focus of the study, was not included in my research permit, would have caused hardship among the respondents, altered the relationship between myself and participants (also the authorities) and, I feel, is not the place of a foreign researcher with such limited understanding of that time. The impact of the restrictions placed by authorities on what I was able and unable to discuss in interviews is considered in the conclusion section 6.6.

The ability of a person to meet basic needs forms an important element of the wellbeing framework adopted. The way in which basic needs are conceptualised as part of the wellbeing framework is further discussed in section 2 regarding methodology. Basic needs were conceptualised along the lines of Doyal and Gough's (1991) Theory of Human Need, which views basic needs as being universal and much more objectively determinable than wants and therefore other aspects of wellbeing. A basic need is considered not to have been met when serious harm of an objective kind may result (ibid). In applying this objective definition of human needs to the rural Rwandan context I interpreted this to mean that an individual's very survival is likely to be threatened by the inability to meet a specific need, such as finding sufficient food or water to survive. In adapting the Theory of Human Need's eleven needs satsifiers, education and safe working environment were excluded and physical and mental health were merged, so that eight basic needs were considered in this study. These consisted of 1) obtaining sufficient food, 2) finding enough water for washing and cooking, 3) adequate physical and economic security, 4) adequate shelter, 5) to be able to find warmth and fuel for cooking, 6) to be physically and mentally healthy and have the ability to find treatment for medical conditions (including childbirth), 7) having sufficient autonomy to meaningfully function, 8) not to be so isolated, void of relationships or subject to negative relationships that one cannot meaningfully function.

However, formulating objective indicators for the meeting of basic needs is not an easy task. In the case of this study it was important to formulate indicators which were easily obtainable, consistent for each respondent and which also differentiated simply, in binary terms between those who could meet that need and those who could not. In this study water was relatively abundant and clean, and there were no instances recorded of people suffering lack of security, autonomy or being so isolated that they could not

meaningfully function. While insufficient water may have been recorded by the inability of people to drink, wash or cook due to lack of water, the other three may have required more qualitative (and in the process subjective) description. Actually determining the meeting of these basic needs would often be best performed by a health professional and these skills are beyond the scope of much social research, including this project. Therefore the main indicators of whether basic needs were unmet for households in this study were chosen to be as clear as possible given my own particular ability to assess those thresholds:

- Food scarcity – if a household went at least one day per month without eating a single meal.
- Fuel for cooking and heating – if a household was unable to afford to buy firewood or charcoal or obtain it from their own land or was limited to illegally collecting firewood, risking fines or beating.
- Health – if a household was unable to afford basic medical insurance and was not provided with free insurance by the government or any other organisation.
- Housing – if a household lived in a very small construction (mostly single room buildings) made of only earth and sticks.

While these basic needs do not measure the threshold at which survival is threatened, they can be consistently applied to different households, represent a strong distinction between types of household. If they are unmet, this may have a substantial impact on the daily behaviour of the members of that household. The inability to find sufficient food regularly, dependence upon collecting firewood illegally, inability to seek medical assistance and the restriction to very cramped housing which is easily damaged and through which water may ingress all have potentially severe consequences for an individual and family in terms of disruption, time consuming activities but also of health effects, including potential malnourishment and potentially reduced child survival. The way in which indicators were applied is further developed in each of the empirical papers in sections 3, 4 and 5.

Figure 1.1 (overleaf). Map of districts in which three study sites are located. Other districts, location of Nyungwe National Park and elevation are displayed. Gishwati Forest lies within Rutsiro District in the northwest, at an elevation over 2,200m. Map provided by the National University of Rwanda Geographic Information Systems Department.

Rwanda Elevation Map

Physical Landscape

Uganda
Nyagatare
Tanzania
Volcanoes National Park
Musanze
Burera
Gicumbi
Gatsibo
Akagera National Park
Rubavu
Nyabihu
Gakenke
Rulindo
D.R.C.
Ngororero
Rutsiro
Gasabo
Kigali City
Kayonza
Kivu Lake
Muhanga
Kamonyi
Nyarugenge
Kicukiro
Rwamagana
Idjwi Island
Karongi
Ruhango
Bugesera
Ngoma
Kirehe
Nyamasheke
Nyamagabe
Nyanza
Nyungwe National Park
Rusizi
Huye
Gisagara
Burundi
Nyaruguru

Legend
Major river
Lake
National Park
District boundary
Elevation in meters
804 - 1,555
1,555 - 1,866
1,866 - 2,261
2,261 - 4,480
Hillshade
High : 254
Low : 0

0 15 30 60 Kilometers

1.6 Background to the study and approach to research

I made my first trip to Rwanda in 2010 and spent two months working as a volunteer on a research project into payments for environmental services, conducting semi-structured interviews with villagers in several remote areas in south-west Rwanda. The rapidity of change struck me as older villagers could describe to me the coming of Christianity in the form of a specific missionary and at the same time could talk about the more recent coming of electricity to one or two houses in their village. People were welcoming, engaged and sincere in their discussions and they were good humoured about my early attempts to speak Kinyarwandan. Several characteristics of life in those locations were striking: The remoteness of many villages, perched on hilltops with nothing more visible than other similar hilltops and valleys between them, the utter silence except for the murmur of bartering on a market day or children leaving school, the violent force with which extreme climate could and did combine with the seemingly impossibly-sloped topography to bring great destruction, and perhaps above all the remarkable density of people who inhabited these areas. Days usually begin at 04:30 when, either the soothing sounds of traditional Kinyarwandan music begin to emit from radios or more alarmingly and effectively it is replaced with the screams of evangelical preaching. With first light, labourers begin to emerge and group together with their hoes, waiting to hear if their labour will be required for the next six hours or not, and when it is they will earn between Rwf400 to Rwf800 (40p to 80p in a day). Within all rural areas in Rwanda, poverty is in evidence. I clearly recall in 2010 interviewing a father who had lost three of his four young children within six months. He did not know exactly why but stated repeatedly that he simply could not grow enough food from his land.

Within those rural areas, at times seemingly unchanged for centuries, I was acutely aware that change was happening rapidly. There were new schools and new health centres, not always fully functional, but clearly new. Next to the small shack selling fresh milk, night time saw queues of people at night looking to pay money to charge mobile phones on the one battery available, always a difficult priority for an outsider to reconcile with starving children. Among the changes occurring to the appearance of village and to people's livelihoods, some are upwardly mobile and others struggling. On leaving the most remote of areas, not only was road building creeping ever closer, but large crews of labourers were busy installing optic fibre cables

for high speed internet into road sides using only hand tools. As I regularly passed these crews by bus, swerving around the potholes in the road, I considered that this contradiction could easily be used as a metaphor for the politics and effectiveness of development: how are decisions made and who is development effective for?

At this time I also met with many Rwandan researchers, NGO workers and government officials to discuss the feasibility of plans for my PhD study and the administrative and logistical side appeared very feasible. However, in discussing the project I was working on in 2010 and plans for my doctoral research, I was aware that any decisions, even regarding a volunteer or a student, had to be made by one of very few people at the head of that government department.

In that first trip I did not form any strong opinions about the effectiveness of rural development, conservation or politics in Rwanda. I knew each of these fields was very difficult areas to achieve improvement in and that efforts were being made. I did not hear negative opinions from anybody I met or knew, even during the build-up to the election in 2010. I realised the picture was complex, change was happening and much of it for the good. Policies were being implemented to tackle difficult issues with conflicting interests such as forest conservation. It was the degree of change which made Rwanda an interesting case study.

Employing the concept of wellbeing does not favour local knowledge and practises over other ways of thinking or vice versa and I sought to avoid such ideological bias. The use of wellbeing makes for a broad scope of study without a pre-determined focus or expected conclusions. There were no hypotheses to test, no defined list of sub-topics and the content of papers within this thesis is actually quite different from that I envisaged three years ago. I would therefore have been very happy to have used a multidimensional look at wellbeing of rural populations to eschew the opinions of Tony Blair and other western figureheads to declare Rwanda a model of development, one to be copied by other African and developing nations, to show the numerous ways in which rural people are benefitting, and to describe the role of forest management as part of it. I hope that my interpretation of the perceptions of participants is not strongly influenced by any such bias.

I had not foreseen the major part that politics would play in the participants' lives and therefore in the following thesis. My own experience had been in the fields of economics, as student and business auditor, in ecology, as student, protected area manager, and researcher for both government agency and non-governmental organisations, and more recently in rural development research, but rather less in political science. This mixed learning and past experience in developing countries allows for a quick interpretation of local economies based on the high street and visible interactions, and to interpret land use and change through looking at the mix of habitats (though understanding social phenomena and cultural values requires more thought-driven investigation).

The initial idea for this thesis was to consider the wellbeing of forest-adjacent communities to locate the importance of natural resources in their wider wellbeing. Many studies looking at links between people and their environment have shown quantitatively that a particular habitat or resource is crucial to people's existence and that its monetary equivalent represents a large percentage of their income (Yemiru et al., 2010, Shackleton et al., 2007, Rijal et al., 2010). Yet many such studies do not look beyond that single resource or habitat. My experience of working in remote rural areas led me to reject a focus purely on the importance of tropical forests and seek to look at people's own perceptions of their wellbeing and the important changes occurring in their lives and to place natural resources in that context. But in the course of looking at wider wellbeing issues across rural households, issues other than natural resource management came to the fore and became important elements of this multidimensional assessment, relegating the consideration of tropical forests to a single paper. From the data which this investigation of wellbeing generated, to write about the importance of tropical forest in the lives of the rural poor and overlook the dominant themes of policy impact and development discourse as major influences on the wellbeing of rural Rwandans would be a very value-laden interpretation of the data collected in the field. Studies of wellbeing are valued for their ability to produce surprising results (Camfield et al., 2009a). This study was clearly an inductive and iterative one.

The way I was perceived by participants in the study plays an important part in the data I collected in 2011/2012 as part of the doctoral research. At each site I took up to several weeks to let local leaders and inhabitants

know that I would be staying locally to conduct research. I spent time walking around the area, purchasing food at markets and speaking to locals and also took part in the monthly community service at two of the three study sites. Being a student is a privileged position for a researcher in many respects as that position is well understood by most, quite different to the agenda and time constraints faced by government officials and representatives of projects or agencies. My position as a student from a UK university also supported my independence, with no further agenda supported by forest conservation organisations, agronomists or by government. A university student is common the world over and even the most remote Rwandan village usually has one or two members who have been to or are attending university. Respondents were made aware that my research would not create a project or initiate instant change, but that over a year after completing the fieldwork, I would produce a book which would contain my findings. At each individual interview and focus group I spent time explaining my role until it appeared to be well-understood and I then gave every individual the option not to take part and not to answer any questions they did not wish to. Not a single person stated a wish not to take part and no questions were refused. Only three randomly selected respondents out of one hundred and sixty five could not be found as they were working elsewhere. And in only three interviews did I feel that respondents were suspicious of my motivations and unwilling to discuss their activities openly. This was primarily among wealthier respondents, some of whom voiced concerns over increasing levies and taxes on their livelihood activities and in two of those three cases I was aware of livelihood activities that were not disclosed to me during the interviews. In other cases numerous respondents confided in me about conflicts within the family, health issues and candid opinions about government policies or local level corruption and this provided me with confidence that my position was well understood as an independent, albeit western student and, to an extent, trusted. This was a mixed methods study, not ethnography, but the attention paid to the researcher-participant relationship went well beyond a rapid rural appraisal. I spent up to three months at each of the three study sites and, overall, more than one day in the field for each of the 165 interviews and eight focus groups conducted. Despite the fact I may have been the first white man some children had seen and certainly a rarity in some of the remote areas, I was not such an anomaly as I may have been even a decade ago. As one respondent stated when I asked what had been

the most important changes for his family in the past ten years: "*In the past we could not have let a white man like you to sit in our home. We feared people like you then, but now people are getting used to it,*" (he was not referring to researchers, but rather to westerners in general). Even though a white person is an oddity in rural areas, there is a clear international awareness among Rwandans today. Development is a common language, even the workings of the national economy, such as the balance of payments, are well known. The radio and dissemination of government messages at meetings play a large role in that.

1.7 Structure of the thesis and description of papers

The thesis is presented in the form of four papers. Because they are intended to read as stand-alone pieces of research, each one requires a methods section and some background information, and because they all stem from the same data collection therefore some overlap is unavoidable particularly in the methods sections.

Common themes run through the papers. In part this is due to the approach taken, wellbeing representing a constant overarching concept throughout the thesis, but it also results from the strong ties between people and the land around them and the key contribution of land tenure to the wellbeing of rural Rwandans. This provides a relevance of the study to other rural areas in Rwanda and also to other rural contexts in developing countries.

1.7.1 Summary of section 2 - From capability approach to practical research: a comparison of sustainable livelihoods and wellbeing in developing countries approaches

The first paper of this thesis looks at the influences, framework and methodology associated with the wellbeing definition applied (or WDC approach after the Wellbeing in Developing Countries Research Group). Rather than describing this single approach, however, the methodology is compared to another approach which has been applied widely to try and understand complex rural contexts in developing countries, the sustainable livelihoods framework (SLF). Both approaches have some common foundations in Sen's capability approach. But while selection between the two approaches may be seen as arbitrary by many, there are important and clear distinctions between them. The SLF differs in its treatment of subjective ways of acting and the relative positions of and interactions between individuals and social and cultural groups. The SLF built upon and shares much in common with previously developed methods which aimed to quickly interpret rural complexity to provide policy relevant insights, particularly participatory rural appraisal (Kaag, 2004).

The WDC pays greater attention to the perceptions of respondents, their own subjective view of their lives and the context which surrounds it (Camfield et al., 2009b). Because wellbeing is very individual and encompasses such a broad spectrum of topics and disciplines, it is a very open means of study, for which it is more difficult to define highly targeted research questions, to predict what the likely results will be, or the types of recommendations which may arise to support a satisfactory quality of life as defined by the research participants themselves. Studies of wellbeing are therefore open to criticism for their lack of focus, attempts to present too much complexity and providing results which are removed from the needs of policy makers (Camfield et al., 2009a). This stems from the WDC approach's multidisciplinary influences, including psychology, sociology, economics and political science (Gough and McGregor, 2007). The paper details the differences between the two approaches, from their inspirations through to their methodologies. These methodologies are then applied to a case study in rural Rwanda and the types of results and implications which arise from each of them are compared.

1.7.2 Summary of section 3 - The influence of cultural difference, power relations and discourse in reproducing outcomes in rural Rwanda

The second paper explores the role that socio-economic and cultural differences play in the way people think and act and how this influences what they are able to achieve. The analysis therefore addresses the first two research questions presented above: 'how do rural Rwandans conceptualise wellbeing?' and 'how do material, relational and subjective wellbeing differ between households, areas and to what extent can different groups be identified?' This has critical implications for the design and assessment of development interventions because people are affected by change and by policies in different ways. This is especially relevant in Rwanda where the differential treatment of groups based on ethnicity has been prohibited as part of the complex, policy-driven reconciliation process.

From the broad wellbeing assessments undertaken in households across the three rural areas in this study, the differences between groups was striking: materially, culturally, in terms of their relative power and also sometimes spatially. Difference was most clearly noted based on people's history and origins. The latter are frequently reduced to the ethnic terms Hutu, Tutsi and Twa, which have endured as terms for many centuries though their meaning has evolved and changed (Vansina, 2005, Pottier, 2002). They endure and continue to change today, despite their being banned from public use today as part of a policy of national reconciliation and unity (Straus and Waldorf, 2011). The analysis is used to compare the positions of social and cultural groups in Rwanda, to investigate the ways in which changes over the past ten to fifteen years have affected those groups and, importantly, to identify variation or exceptions within the groups commonly referred to in Rwanda.

In wellbeing terms, the paper investigates relational and subjective aspects of wellbeing in a rural context, exploring differences in the feelings and actions of individuals based on their subjective feelings and actions and also their status relative to others to provide a multi-layered conception of the factors which restrict, enable or influence people to think and behave in certain ways. To achieve this concepts of power are discussed and utilised to represent the relational aspects of wellbeing. In seeking to understand local complexity, variation in ways of thinking and acting, and the influence

of both local and global scale interactions, this study considers multiple forms of power: coercive, agenda-setting and discursive (Lukes, 2005). The recognition of multiple forms of power avoids the likelihood of taking an ideological stance which demonises development or foreign cultures and popularises local knowledge, which has been common in studies incorporating Foucauldian definitions of power (De Sardan, 2005a).

To both explore and link relational and subjective dimensions the analysis includes the notion of dispositions which an individual may exhibit in different social arena and which form a habitus (Bourdieu, 1977). Bourdieu's theory of practice (Bourdieu, 1977) may be seen as a complex, multi-layered theory to bridge different and, importantly, more narrowly defined conceptions of social reality (Gaventa, 2003). The theory of practice addresses the impact of upbringing and experience in influencing the way people respond to and act in different situations. In doing so it offers a broad framework for considering the complexity of people's individual, subjective ways of thinking and acting and is therefore compatible with the multidimensional definition of wellbeing (White and Ellison, 2007).

1.7.3 Summary of section 4 - Assessing the contribution of ecosystem services to human wellbeing: beyond monetary values

The third paper addresses a policy realm which has profound effects on the wellbeing of rural populations, yet which is also the subject of great assumptions and simplification: natural resource management. The contribution of the surrounding landscape and the natural resources within it to the wellbeing of local populations is explored. In doing so the paper contributes to answering all four research questions presented above but pays particular attention to question 3: 'What resources, both tangible and intangible, are important for households in meeting their basic needs and satisfying particular goals for wellbeing? How does this differ by household and by place?'

In rural areas in the developing world people's wellbeing and cultural practices are strongly linked to land and land-use (Barbier, 2010). Rural inhabitants value and use the landscape not only to grow food but to meet many of their needs and wants. The paper presents a framework combining wellbeing with ecosystem services, a concept which has become a

principal lens for policy makers to view landscape planning yet one that has been simplified to focus overwhelmingly on material aspects of natural resource use (Gómez-Baggethun et al., 2010). The framework is applied to the case study of the three study sites in western Rwanda to assess the contribution of natural resources to the wellbeing of rural inhabitants.

All three sites lay alongside areas of tropical rainforest, the heavily depleted Gishwati Forest in the northwest and the well-protected Nyungwe National Park in the southwest. Nyungwe National Park in the southwest of Rwanda (Figure 1.1) forms one of the largest and most biologically diverse areas of tropical montane forest in Africa and Gishwati Forest is currently under reforestation (Plumptre et al., 2007). Yet the wider landscape includes wetlands, agricultural land and non-native forest habitats. The paper considers the landscape as a multifunctional one and, rather than focusing on habitats prioritised for biodiversity conservation, accommodates ideas from fields of landscape ecology and human geography (O'Farrell and Anderson, 2010).

There is a considerable global financial support for ecosystem service studies and projects through governments and organisations responsible for land management on very large scales, accompanied by considerable rhetoric about the win-win situations which may result for both conservation and poverty alleviation (de Groot et al., 2010). However, enhancement of ecosystem services, biodiversity and human wellbeing on a local scale are more often conflicting than synergistic (Robards et al., 2011). Developing understanding of the complex relationships and tradeoffs between them requires a wealth of data to be able to form baselines, assess the threats and opportunities, to be able to monitor effectively and to be able to assess the impacts of natural resource management (Rodriguez et al., 2006). Ecosystem service projects will have a considerable influence on the way in which natural resources are governed and managed in the future. But as yet there is little guidance for how definitions of wellbeing should be applied (Wunder, 2007).

Instead, much ecosystem services work attempts to recognise the economic value of nature, and assumes this will lead to improved wellbeing through increased investment in natural resource conservation (Tallis et al., 2009, Fisher et al., 2008, Gómez-Baggethun et al., 2010, Norgaard, 2010). This simplification about the ways in which landscapes and resources are

valued has created an economic bias in ecosystem services research and policy (Pagiola et al., 2002, Kroeger and Casey, 2007) which may fail to guarantee socially desirable distribution of natural resources (Fox et al., 2009, Kosoy and Corbera, 2010).

Relatively few ecosystem service studies utilise mixed methods or qualitative approaches to understand the ways in which people value different resources and habitats (Polishchuk and Rauschmayer, 2012). In paper 3 the concept of ecosystem services is used to understand the diverse ways in which people benefit from natural resources and in moving beyond material considerations the concept of wellbeing is used to assess in detail the multiple pathways by which these uses of natural resources impact upon people's lives and to consider changes in that relationship. This definition of wellbeing indicates that people hold different values and act in different, perhaps conflicting ways and allows for an understanding of why trade-offs in ecosystem services arise (Coulthard et al., 2011). Such understanding may also provide insights into how such trade-offs may be reconciled and long-term goals of sustainability achieved through novel interventions.

1.7.4 Summary of section 5 - Agrarian change and the wellbeing of the rural poor: from theory to complex realities

The final paper addresses different changes affecting the wellbeing of rural Rwandans and local agricultural practices. The framing of, strategies behind and impact of recent agricultural policies are considered in the context of wider changes occurring in people's lives and the paper explores how people are differentially affected by those changes. Although the analysis has a role in answering all four of the research questions posed above, it is of particular relevance in answering the fourth question: 'What changes have occurred in the last ten to fifteen years and how have they affected wellbeing at the household level? What are the main political, economic, environmental or social drivers of those changes?'

Agriculture is intimately linked to the wellbeing of rural populations and their ability to escape poverty (Norton, 2004). But narratives and simplifications are rife in agricultural policy in developing countries, over which developed countries have considerable influence (Roe, 1999). Many of the solutions have employed technical, scientific thinking to culturally distinct ways of

acting, attempting to impose straight lines and singular crops to maximise production (Bates, 2005). As de Sardan (1988, 220) notes:

"*Yield per hectare does not correspond to the technical and social conditions of most African agricultures, and that the reliance on a climatic average is not relevant from the producer's point of view. Local soil conditions vary a good deal, not only from one village to another but also from one field to another, so that the 'simplicity' (usually synonymous with rigidity) of the technical packages is not adapted to the considerable soil variation, nor to the adaptability of the peasants or to their complex ability*."

Rwanda has the highest population density on mainland Africa and the population is growing rapidly (NISR, 2007). The country is frequently cited as an example of Malthusian land crisis (André and Platteau, 1998) and this perspective influences policy framing. Based upon this policy framing quite radical solutions have been implemented with multiple objectives of rural development and economic growth.

However agriculture and wellbeing are connected by more than material linkages. The knowledge which smallholders possess and use in their daily farming practices represents not only a human resource but a cultural one too, because it has developed through interaction with others in response to the difficulties and uncertainties which the terrain, climate and other factors impose upon the population of those ecosystems (Leach and Fairhead, 2000, Berkes et al., 2000). From that learned and repeated response to growing food under the environmental constraints faced, cultural practices of land management develop and should not be assumed to be inherently inferior to methods incorporating more modern inputs and technologies. Farming methods often become common to people across a wider area. Systems of production, labour, trade, relations and sharing may all develop so that the local social and economic systems are linked to local food production practices. The relationship between agricultural practices and wellbeing is therefore complex and often relates to subjective and relational wellbeing as well as purely material aspects. Therefore judging a system on indicators of crop production alone may not represent the true contribution to the wellbeing of rural populations.

The system of farming in western Rwanda, given the extremes of topography and climate, is a complex and adaptive polyculture strongly embedded in the culture of this mountainous region (Pottier and

Nkundabashaka, 1992). That system has developed as a response to extreme topography which constrains food production as crops are grown on slopes up to and above 55 per cent gradient (ROR, 2000) and face high levels of rainfall over variable rainy seasons (between 1400 and 2000mm per annum (ROR, 2004). Local farming systems have also been adversely affected by soil deterioration, environmental change, and population increase (Rutunga et al., 2007).

The paper considers the suite of changes impacting lives and land use of different households, differentiated based on the key material and human resources of land holdings, livestock, housing and occupations. The impacts of economic, social and environmental changes are considered alongside the land policies which have been introduced in pursuit of increased agricultural growth and food security. The analysis integrates an assessment of the wellbeing of rural populations with theories of agrarian change to reveal the variation in multidimensional wellbeing within rural areas and the potential of such awareness to inform the design and assessment of agricultural and development policy.

1.8 Brief conclusions

Section 6 of the thesis provides detailed conclusions from the study and their implications for policy, applications for the methodology and implications for theory. A brief summary of the main conclusions is given here.

The application of the multidimensional wellbeing definition in this thesis has strong implications for development policy and research, both for Rwanda and methodologically for the policy domains to which it was directed. This mixed methods approach to understanding complex rural contexts reveals some of the simplifications and assumptions contained within policy framings, strategies and assessments and provides an alternative methodology which may be adopted and applied to different fields and contexts to overcome the limitations of broad-scale, technical, evidence-based or 'confirmatory' approaches. The simplifications inherent in those approaches lead to inconsistent results and often in harm to the wellbeing of people most in need of the benefits of development. The indigenous Twa stand out as being particularly disadvantaged by the homogenisation of development subjects and relative positions of power between different social and cultural groups in Rwanda. However the

subjectivity of feelings and practice and variation within groups considered representative of substantial numbers of people is also noted.

The variety of ways in which people perceive and value resources is also commonly overlooked for policy purposes. This has particular implications for and potential application in the sustainable management or conservation of natural resources. As renewed efforts to reduce global ecosystem degradation in the form of ecosystem services projects apply monetary valuations and perpetuate this oversight, the application of more holistic, discursive, qualitative methods are required to allow sufficient space for the different types and philosophical basis for valuation to be expressed beyond monetary terms (Soderholm, 2001, Wegner and Pascual, 2011), which, as this study reveals, a wellbeing framework and methodology facilitates.

Finally, although not directly recognised in global poverty indicators, the ability of rural populations to meet basic needs is intimately linked to agriculture, land tenure and systems of social interaction which surround it. These complex systems and the ways in which they underpin rural communities are poorly reflected in the dominant theories and visions behind agricultural development, such that policy which is deemed to be successful in improving crop outputs, food security, production of exports or use of technology, may in fact have negative and unrecorded effects on large numbers of the rural poor.

The development policies described and the research methods which commonly support them have persisted for many years. The mixed methods utilised in this study and their application to different fields illustrates some of the unobserved and overlooked effects that development policies based on assumptions and limited understanding may have. These impacts and the consequences they may have for poor rural populations are put forward as key reasons for a shift, or improvement in the approaches that underpin the framing, design and assessment of development policies and proposes some ways forward, both in Rwanda and beyond.

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2. METHODOLOGY:

FROM CAPABILITY APPROACH TO PRACTICAL RESEARCH: A COMPARISON OF SUSTAINABLE LIVELIHOODS AND WELLBEING IN DEVELOPING COUNTRIES APPROACHES

2.1 Abstract

Recognition that economic indicators are insufficient to understand the complexities of individuals' lives has led to the advancement of more holistic theoretical approaches. Sen's capability approach represented a major progression, upon which many other theories and concepts have been based. This paper describes two approaches to researching complex social contexts in developing countries with common foundations in the capability approach: the sustainable livelihoods framework (SLF) and the wellbeing in developing countries approach (WDC). Although selection between these frameworks may be considered arbitrary by some researchers, this paper describes the fundamental differences between them, in terms of their ontologies, methodologies and therefore strengths and weaknesses. These are practically illustrated through the application of each approach to the study of rural communities in Rwanda. The SLF has been used extensively for the direct and relatively rapid assessment of material aspects of wellbeing and change in rural communities in developing countries, with explicit links to livelihoods and potential policy strategies. The SLF tends towards generalisation of dominant characteristics and key trends in rural communities, which makes SLF research relatively easily standardised, explaining its popularity among development practitioners. In contrast the WDC approach gives greater consideration to local subjective perspectives, fine-scale variation and the importance of interactions and relative power in influencing wellbeing outcomes. In doing so, it allows greater scope for complexity and diversity. Though more difficult to operationalize, the WDC is a broad and multidisciplinary approach which, particularly through attention to subjective wellbeing and relative power may provide more surprising results and allow interpretation of perspectives which are frequently under-represented in the design and assessment of development policy.

2.2 Introduction

Research aiming to inform development interventions in developing countries has long recognised that economic indicators are insufficient to understand the complexities of individuals' lives, actions and struggles (Easterlin, 2003, Sen, 1981). Development initiatives that have relied purely on economic indicators and oversimplified assumptions of social systems have frequently failed because they fail to account for differences in people's motivations and behaviour (Bebbington, 1999). Such failure can include unforeseen costs for those whose wellbeing they seek to improve. Recognition of this shortcoming has led to the advancement of a number of theoretical approaches which aim to provide a more nuanced understanding of the choices and difficulties faced by people. One of the most influential of those has been the capability approach (Sen, 1984), which transformed the way wellbeing was conceptualised in research from economic indicators such as income to include a range of competencies and social factors. Capability was defined as the freedom one has to engage in different activities and through them to realise combinations of wellbeing states, which were defined as functionings (Sen, 1984). Sen recognised that in considering a person's quality of life it is necessary to consider variation between what individuals may achieve, diversity in the environments they live in, and differences in social context because, based on this variation, different people will achieve different functionings, even with a similar set of resources (Sen, 1999).

While many theories have built on the capability approach, some have also put forward a practical research agenda incorporating these ideas. I do not seek here to construct a list of approaches developed from the capability approach (see for example Gasper's (2004) critique of Nussbaum, Dasgupta, Doyal and Gough and others). In this paper I detail two such approaches: one, the sustainable livelihoods framework (SLF) which became prominent in the late 1990s and was widely adopted by large development donors and organisations (Ashley and Carney, 1999), and a second, put forward by the wellbeing in developing countries research group (WDC), for the study of wellbeing, the application of which concept has received attention from many organisations in recent years, including UK and French governments. The capability approach, along with concepts of wellbeing put forward by Chambers (1995), was used to give a broad scope for the definition of livelihood used in the SLF to include non-material

resources and activities needed to provide a means of living (Scoones, 1998). In the WDC concepts the capability approach played a similarly pivotal contribution in expanding the definition of wellbeing to include relational and even subjective dimensions in addition to material wellbeing (Gough and McGregor, 2007). Both the SLF and wellbeing approach seek to promote ways to understand the diversity and complexity involved in the lives of people living in developing countries, from a local perspective. They try to put people at the centre rather than focusing on larger scale indicators, single types of resources or a singular policy or change. And one of the key aims of both approaches is to use this greater understanding to contribute to poverty alleviation (Scoones, 2009, Camfield et al., 2009a).

Because the approaches have similarities, they are often assumed to be interchangeable, as if it were an arbitrary choice of framework to fulfil similar research goals, each being equally valid. Although the SLF is particularly flexible based on the preferences of the researcher and purpose of the research, selection of a framework needs careful consideration and as I will show, this has potentially strong implications for the research outputs. I aim to show the ways in which these approaches differ in terms of their roots and inspiration, design and epistemology. In turn I will show how their methodologies differ through a particular case study and discuss their relative merits in being applied to different circumstances.

2.3 Comparison of the two frameworks, approaches and their conceptual parts

The conceptual framework diagrams presented for both SLF and WDC attempt to reflect the diversity and complexity of people's lives which they seek to describe, but also to make clear the methodological approach required to apply them (Figures 2.1 and 2.2). Here I use the frameworks put forward by Scoones (1998) for the SLF and one of the few detailed diagrammatic frameworks put forward for WDC by McGregor (2007) and elaborate these through the associated literature. The SLF diagram (Figure 2.1) provides a number of concepts which are key to the approach and beneath each lists categories to be investigated for the research of sustainable livelihoods. A livelihood is defined as comprising "*the capabilities, assets (including both material and social resources) and activities required for a means of living*" (Scoones 1998 from Chambers and

Conway, 1992). The framework highlights the unique context in which people live, the types of resources available to an individual and the mediation of access to them by institutions and organisations. The resulting behaviour which an individual or household may engage in is broken down into a smaller number of given livelihood strategies which may, in turn, result in a listed variety of potential livelihood and sustainability outcomes. The WDC framework by comparison provides far fewer categories to be followed and merely highlights that wellbeing outcomes may consist of resources, needs met or a quality of life achieved, that different scales of interactions affect wellbeing from the household to the global community and that wellbeing is an ongoing process, a point also made clear in the SLF.

While framework diagrams may, somewhat arbitrarily on occasion, contain some and not all of the concepts and descriptions contained within an approach to research, this difference in the depth of concepts and categories predetermined in each framework is not simply attributable to diagrammatical style and highlights some important contrasts between the two research approaches. However differences will also be explored with reference to research which has tested or practically applied each framework and variation within each approach will be discussed. The WDC framework (Figure 2.2), although appearing sparse relative to the SLF (Figure 2.1), is consistent with the definition of wellbeing as “a state of being with others, which arises when human needs are met, when one can act meaningfully to pursue one’s goals, and when one enjoys a satisfactory quality of life (McGregor et al., 2009). I will develop this argument further below by looking at the individual elements of each framework and their origins.

Figure 2.1. Sustainable livelihoods framework (Scoones, 1998).

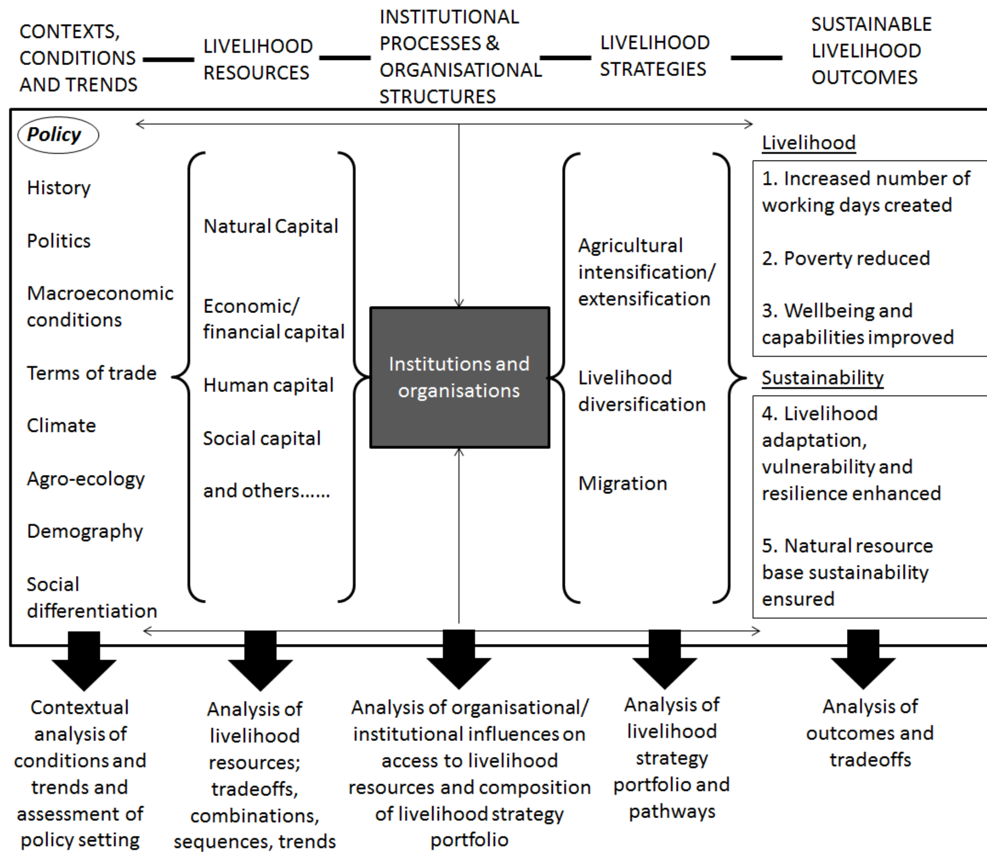
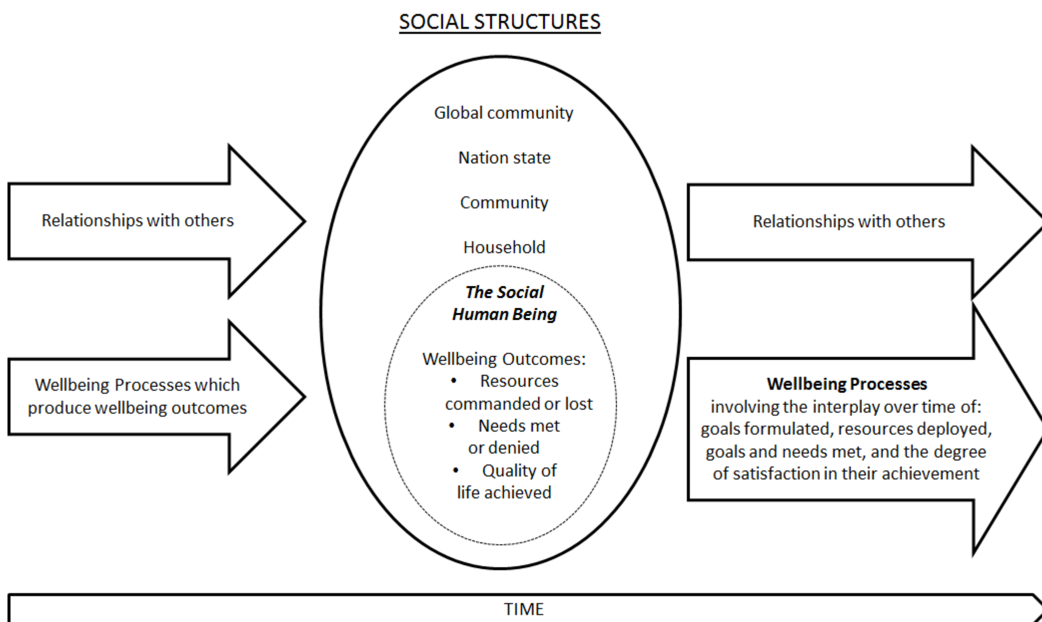


Figure 2.2. Wellbeing framework (McGregor, 2007)



2.3.1 Resources

The resources available to an individual form integral parts of both SLF and WDC approaches (Figures 2.1 and 2.2). The different resource types beyond financial indicators had received attention in social theory and were developed in part from Sen's famine analysis (1981), which recognised that human, natural and to an extent social capital also play a key role in a person's entitlement to food. The multiple categories of material, natural, human and social resources are common to both frameworks, while, although not explicitly listed in the framework diagram, WDC also adds cultural resources to the resource categories, a concept influenced notably by Geertz (1965) and Bourdieu (1989).

However from the same theoretical foundation, emerging conceptual frameworks focusing on livelihoods diverged in an important respect. One framework became the SLF and the other became one of the contributing elements to WDC, the resource profiles framework (RPF). The latter sought to understand the factors comprising a meaningful life for an individual beyond livelihood activities and in doing so developed the definition of resources beyond capitals (Saltmarshe, 2002), which the WDC approach has incorporated.

The SLF, as Sen (1981) had done, looks at resources in terms of stocks of capital which, if accessible, can be mobilised to achieve wellbeing outcomes. SLF was initially developed from a food security and natural resources perspective, incorporating environmental economics. The conceptualisation of resources adopted (Scoones 2009) were strongly influenced by the forerunners to SLF, participatory and rapid rural appraisal (PRA and RRA) which had become common tools for development professionals in rural and agricultural research (a point which will be elaborated below). The focus of these research approaches was to assess effects of social and institutional structures on asset bases, primarily assets that could be interpreted as agricultural capital (Bebbington et al., 2007).

Attempts to describe resources in capital terms assume a consistent, rational behaviour in neoclassical economic terms: that people can and will seek to do the same as one another and also apply a similar valuation to the same bundle of resources. In contrast, the actual definitions of livelihood attributed to the SLF in accompanying literature do include the

individual values that people attribute to certain functionings, and this led Chambers (1997) to suggest that livelihood research may allow people themselves to define the criteria which are important for a livelihood. However this individuality or hint towards subjectivity in the livelihood definition was taken up neither by SLF frameworks nor by research stemming from it (White and Ellison, 2007). In this respect the SLF is a more universalist or objective approach than that definition implies, setting about instead to investigate variation in specific types of capital. Access to a portfolio of these capitals allows for a limited number of behavioural choices or strategies which may be pursued to realise a number of given outcomes. Although those outcomes may result in improved capabilities for some, that result is assumed to be consistent because little room is given to subjectivity among participants.

2.3.2 Subjectivity

The second area of livelihoods research, from which the RPF developed to consider resources over capitals, was further influenced by Long (1989, 1977), who argued for an actor-oriented approach to rural studies, and Bourdieu (Bourdieu, 1989), who used the concept of symbolic capital to explain that people act for many reasons other than material gain, being also motivated by social and cultural interactions and objectives. The RPF emphasized that what people have and do has a more subjective meaning (Lewis, 1993, Saltmarshe, 2002). Drawing on this foundation WDC describes wellbeing as being determined by “what a person has, what they can do,” and in addition “how they think and feel about what they both have and can do,” (McGregor et al., 2007). The SLF addresses only the first two elements of this social equation. Elements of thinking and feeling about resources and outcomes introduce a subjective element to wellbeing and it is precisely this additional subjectivity in wellbeing which further distinguishes the concept from measures of livelihoods. Those subjective values influence each concept within the approach from definitions of what constitutes a resource through to wellbeing outcomes (Camfield and Skevington, 2008). While other research approaches to wellbeing may be more deterministic (Nussbaum, 2003), the framework (Figure 2.2) leaves open to the individual the question of exactly what wellbeing may consist of in their given context.

The capability approach developed to increasingly involve elements of subjectivity (Sen 1984, 1999) and has latterly been interpreted to represent the freedom for somebody to live the kind of life they have reason to value (Robeyns, 2005). Although the SLF does look at what people have and do, they are conceptualised in different terms to WDC, because what people have and do in the latter are influenced by the meanings which an individual attributes to them. This subjective dimension to wellbeing is influenced by individual perceptions, and also social interaction and cultural values and beliefs which can be termed as intersubjective elements (White, 2009).

The meanings attributed to resources, and the establishment of wants and aspirations derive in part from individual agency, defined as the feeling of competence to act independently in pursuit of wellbeing (Ryan and Deci, 2000). In addition to providing meaning to resources, agency is also affected by an individual's resources, which are enabling, providing capabilities and confidence to act. The importance of recognising agency appears straightforward. However, the influence of agency is often overlooked in development, through both generalisations about groups such as 'the poor' and through its subordination to alternative definitions of power (Appadurai, 2004). It should be noted that the opposite also applies, whereby authors such as Giddens (1979) have been criticised for overemphasizing the role of agency above social and historical interactions. But as Hill (2003, 127) notes:

"Theories of institutionalized power that focus on explanations of its reproduction over time, including the later theories of Foucault, too often leave little room for human agency to change practices. The capability approach uses substantive human freedoms as the appropriate evaluative measure of human welfare. Accordingly, women and other marginalized groups recognize the value of democratization, of seeking out the voices of the underrepresented, and of building channels through which they can more effectively enter the social choice process and shape social institutions to advance their welfare."

Due to variation in agency between individuals it is therefore necessary to add explanatory value to simple observation and recording of resources,

actions and outcomes, through the values and perspectives of the subject (White and Ellison, 2007).

The meanings attributed to resources, and the establishment of wants and aspirations derive not only from individual agency, but are also constructed through relationships, groups and through culture by the social and political construction of norms and values (and the three are also interrelated) (Coulthard et al., 2011). Culture fulfils multiple roles in the WDC framework, acting both as a resource, a reproduced way of acting to attain wellbeing outcomes, and also a factor influencing the social construction of meaning (White and Ellison, 2007). For example a method of farming may have developed over centuries as a response to environmental uncertainty and those methods represent a cultural and human resource dependent on the farmer's history, cultural influences and relationships (Zoomers, 1999). Even farmers in developed countries may be very inflexible in their livelihoods, continuing to work long hours for very small material gains, despite owning assets with high value which could provide a straightforward exit strategy. The same has been shown for fishermen in developing countries (Coulthard, 2008). The impact of that reproduced way of acting influences an individual's very identity (Geertz, 1965) such that the meaning attributed to different types of seeds, crops, relations will quite clearly be influenced by that developed culture.

The same dual role is true for social relations (though there is often overlap with culture). The social being is central to the WDC framework and the part that friends, relations, society and structure play in the decisions and WB of that social being is very important. In the SLF social capital is regarded as an ownership of something in that model, for which people may be termed insiders or outsiders depending on whether they have access to a type of capital through a certain relationship (Ellis, 2000) and this approach is very different to the social resources referred to in WDC or RPF (Gough et al., 2007). These approaches also take account of the fact that people may struggle, not simply for material gains, but also for respect and may even mobilise resources simply to help meet the wellbeing outcomes of other people (Bourdieu, 1989).

<u>2.3.3 Relational aspects and power</u>

The intersubjective elements of social relations and culture, are highlighted in the framework through the consideration of the "social human being" and

are therefore interrelated with relational wellbeing, highlighted by the repetition of "relationships with others" in the framework (Figure 2.2). This represents another important, yet less obvious difference between the two approaches. The relational dimension of wellbeing in the WDC approach focuses attention on "the rules and practices that govern 'who gets what and why,'" (White, 2009). This dimension provides recognition not only of the importance of interactions with others in developing common values and practices, but also of the influence of power, between people and institutions and also relative power between individuals and groups of people, in shaping, promoting or restricting interactions, behaviour and outcomes (Mosse, 2010, Gough et al., 2007). The SLF and associated research include scope to consider power issues through the exploration of institutions, both formal and informal and their impact on people's capitals and strategies. However, in reality issues of power have been frequently overlooked (Zoomers, 1999, Ashley and Carney, 1999).

2.3.4 Livelihood or wellbeing outcomes

Regarding wellbeing outcomes or what people are able to do with their resources, the two frameworks also differ. The SLF seeks to classify behaviour in terms of common strategies and to link these to a number of possible policy responses. This is clear not only in the practice of livelihoods research, but in the very framework itself (Figure 2.1) as the livelihood strategies given are the envisioned behaviours most closely aligned with the goals of development projects and policies, put forward as agricultural intensification, livelihood diversification or migration. There appears to be little space among those put forward for alternative strategies based on cultural knowledge and practices, on modes of subsistence or social protection among rural communities. As Scoones (1998) suggests, the "*approach emphasises getting the institutional and organisational setting right,*" for different types of people to be able to follow those strategies considered desirable in achieving development outcomes. In contrast to those limited strategies, the outcomes considered (increased working days and wellbeing, reduced poverty, vulnerability and sustainable use of the natural resource base) are extremely broad and provide scope to look holistically not only at what individuals are able to attain, but also the entire social-ecological system of which they are part through attention to resilience, vulnerability and sustainable use of the resource base. The

actual criteria applied to these outcomes are discussed in further detail under methodological approaches.

In WDC, wellbeing outcomes or “what they can do,” is split between meeting basic needs and quality of life achieved. The importance of the distinction between basic needs and other outcomes has been highlighted by numerous different authors seeking to theorise wellbeing (Doyal and Gough, 1991, Cruz et al., 2009). While basic needs may display some variation between sites or individuals, there is also a consistency for all humans and it is considered to be more universal or consistent than other sub-concepts in this framework. Basic needs are represented in WDC along the lines of Doyal and Gough’s (1991) theory of human need (THN), which itself draws on insights from other fields including self-determination theory (Ryan and Deci, 2000). It was the combination of this theory along with the RPF that formed the basis of the WDC approach (MacGregor) and this represents a more explicit consideration of poverty than through the SLF. However this consideration of basic needs represents a more objective and universal definition which may be considered inconsistent with the attention to subjectivity in the WDC approach (Gough, 2004) described above.

THN recognises ‘health’ and ‘autonomy’ as universal needs, which are met through eleven intermediate satisfiers, which include food and water, housing, non-hazardous work environment, non-hazardous physical environment, health care, security in childhood, significant primary relationships with others, physical security, economic security, education and safe birth control and child-bearing. These intermediate satisfiers may be adapted to different contexts and are not explicitly listed in WDC frameworks or literature. However, for any individual there are lower thresholds of some of these categories below which they could not meaningfully function or where serious harm of an objective kind will result (Doyal and Gough, 1991), which may be interpreted to be akin to physical ability to survive certain sustained deprivations. A failure to meet basic needs can also feedback on social relations through reduced ability to cooperate with others. Basic needs have been put forward as a human right to which all people should be entitled and therefore a basis for the politics of development and while the WDC approach adopts a more objective measure than for other elements of wellbeing, these do not reflect

the extent of objectivity evident in global measures such as Millenium Development Goals or Multidimensional Poverty Indices.

The quality of life somebody achieves, beyond meeting basic needs, includes formulation of goals and levels of satisfaction with their attainment. A “satisfactory quality of life,” is necessarily subjective because what constitutes a satisfactory quality of life differs by individual. This implies that the areas of a person’s life which are given attention through research should be those of particular relevance to the individual. Those areas could include easily observed or measurable elements such as health, housing and material wealth or could focus on less easily observed or measured areas such as perceived freedoms or the relationships (positive or negative) with neighbours, authorities or between members of the same household. Therefore a flexible definition of wellbeing or livelihoods, which can incorporate individual perceptions and priorities, is necessary to pursue these subjective dimensions. Resources can also constitute a wellbeing outcome as they are not only a means to act to achieve something but may also be attained through wellbeing processes (Figure 2.2).

2.4 Methodological approaches

The capability approach did not specify how knowledge about capabilities and functionings can be acquired, how they can be observed and understood and the approach to researching capabilities and functionings was therefore open to interpretation (Gasper, 2004). The capability approach has certainly influenced universal, objective indicators such as the Human Development Index (Anand and Sen, 2000) and Multidimensional Poverty Index (Alkire, 2008) alongside more subjective interpretations such as the WDC approach. Although both SLF and WDC have developed from this common foundation, there are ontological, epistemological and methodological differences between them (Table 2.1). In general, WDC is a relatively interpretative and inductive approach, while SLF seeks to describe a more objective reality through deductive means.

Table 2.1. A representation of ontological, epistemological and methodological approaches inferred from the frameworks for sustainable livelihoods and wellbeing and developing countries approaches

	Wellbeing in Developing Countries Framework	**Sustainable Livelihoods Framework**
Ontology - what is the nature of reality?	Different realities exist based on individual, relational and contextual factors though basic needs considered more universal	There is one single reality, though it cannot always be observed
Epistemology - how knowledge can be acquired?	Those realities can only be interpreted by an individual/ researcher and not established as truth	That reality can be established through observation and recording of people's capitals, actions and outcomes
Methodological implications - how to establish what the reality or realities are and draw conclusions?	Perceptions and actions must primarily be interpreted inductively to develop or match to existing theory	Categories can generally be put forward from theory to draw distinctions and deductively understand reality

The ontological difference between the frameworks follows through to the epistemological and methodological approaches taken in research. The clarity of the distinctions represented in Table 2.1 are for illustrative purposes and based largely on the works which present the frameworks in figures 2.1 and 2.2. The methodological stances outlined in those works amplify the differences between the approaches, whereas in their practical application there is more overlap, with wellbeing studies incorporating some elements of deductive research through observation of basic needs and more recent livelihoods studies allowing for some inductive study of social and cultural capital (Bebbington et al., 2007). Due to the multidisciplinary foundations for the WDC approach and the epistemological diversity between economics, sociology, psychology, anthropology and political science, McGregor (2007) claims the approach to be an interductive one, rather than simply deductive or inductive and the WDC approach can therefore also be considered to draw from the ontology and epistemology attributed to the SLF in Table 2.1. This is further supported by the fact that mixed methods have been commonly applied to WDC research, which

utilise consistent quantitative indicators alongside qualitative data (Camfield et al., 2009b). However while research applying the WDC approach has frequently incorporated objective indicators in the study of wellbeing, those studies have crucially retained a focus on the subjective elements (Camfield and Ruta, 2007, Crivello et al., 2009, White et al., 2012, Camfield and Crivello, 2009), even if utilising standard questionnaires as a research method rather than more qualitative techniques (Copestake and Camfield, 2009), such that this distinction drawn between the two approaches is still sound.

Subjectivity represents a key difference between these two frameworks and this has important implications for the types of outputs which are likely to be produced by their application. Individuality in motivations and aspirations was considered in the capability approach but largely in terms of the impact of agency on an individual's behaviour, which Sen realised had a separate effect to the influence of autonomy or constraints imposed (Sen 1985, 1999). It is for these reasons that capability has been interpreted as the freedom for somebody to live the kind of life they have reason to value (Robeyns, 2005), and not the kind of life which others may determine they should value.

Because the more holistic and multidisciplinary WDC approach pays specific attention to subjective elements and the diversity of perspectives on wellbeing evident among participants, it is more difficult to conduct the research, less readily standardised and also more difficult to focus on specific issues. For all of these reasons it may also prove difficult to professionalise in the way that the SLF was in the late 1990s. WDC research lends itself to quite open and potentially multidisciplinary results which may have surprising, unexpected results providing counternarratives and new theory on the way poverty and wellbeing is experienced. It may even be hard for two wellbeing researchers to reach some agreement on how to summarise the main points from expansive wellbeing data, particularly as the WDC approach builds on a rich array of previous work from multiple disciplines and individual researchers bring their own experience and knowledge in both collecting and interpreting data (Gough and McGregor, 2007).

The methodological approaches also differ due the explicit aim of the SLF to produce data and draw conclusions consistent with the needs of policy makers in devising strategies for intervention. In doing so livelihoods research seeks to measure and classify capitals, actions and outcomes to enable description of the complexity of local livelihoods based on predetermined and objectively defined criteria, which match the dominant thinking within development institutions. The resulting methodology is therefore much more deductive than the WDC approach. However, for these reasons the subsequent application of SLF (despite recognition of complexity and informal as well as formal institutions) has been as a checklist of aspects of people's lives to consider investigating to enable policy recommendation, rather than as a practical tool for the enhanced understanding of the complex lives of research participants, even as judged by those who designed it (Ashley and Carney, 1999). The explicit objective of policy relevance can be seen to enforce a compromise of the SLF's theoretical roots in Sen's capabilities (1984) and Chambers and Conway's definition of wellbeing (1992) in favour of alignment with the reductionist assumptions and broad-scale technical solutions common in the design of development policy (Kothari, 2005).

The importance placed on generating sufficient evidence to ensure policy relevance reflects the involvement of policy makers and development professionals in its design, rather than social and environmental scientists alone, and this represents a key strength for some which has contributed to its popularity as an easily implemented, cost effective means to come to terms with complex rural contexts (Kaag, 2004). However, this has implications for the methodological approach to livelihoods research. Although some critics have suggested that non-material aspects of livelihoods are often overlooked due to lack of capacity to study them (Zoomers, 1999), the SLF limits attention paid to non-material elements of behaviour in order to maximise the policy relevance and therefore influence of livelihoods research (Scoones, 1998). Whereas aspects of the framework, including capitals, institutions and livelihood outcomes, may appear to be very broad and quite holistic, their scope is effectively pre-determined and based primarily on material indicators and criteria considered to be easily observed and measured. The focus on purely economic and environmental behaviours and outcomes has attracted criticism for the lack of attention paid to cultural and relational factors (Arce, 2003). Yet additionally this approach bears unsurprising similarities to one

of its influences, PRA, which has been heavily criticised for privileging the knowledge of development professionals over local actors, for aligning with and promoting the policy objectives of powerful development actors (such as pursuit of national economic growth) and for its cursory attention to participation in contrast to the inherent consideration of positionality and reflexivity in anthropological studies (Mosse, 1994, De Sardan, 2005). Perceptions, actions and descriptions are influenced by the perceived position of the researcher and their relationship with participants. Subsequently those data are interpreted through the researcher, whose knowledge, past experiences and feelings determine how it is translated into research findings (Spivak, 1988). Research assuming a more deductive pathway to knowledge generation, such as the SLF, tends to overlook such factors, which are frequently associated with more anthropologically grounded research or an inductive method to knowledge generation, whereby theory may develop as data builds up, as suggested through the WDC framework.

Despite the strong distinctions drawn here, the actual research methods which have been applied in utilising the two frameworks have been varied. Methods may differ depending on the scale of research such that WDC research may apply quantitative techniques to compare indicators of wellbeing between countries, while SLF research may utilise qualitative techniques such as focus groups to undertake village level livelihoods research. There have been calls for both frameworks to use mixed methods, both qualitative and quantitative (Camfield et al., 2009a, Scoones, 1998). However, in general, from the ontological and epistemological positions stemming from each framework, wellbeing research requires the incorporation of qualitative techniques such as unstructured interviews, life histories or more ethnographic work which allows sufficient expression of a person’s values and feelings. WDC research does not necessitate use of more quantitative methodologies. Methods need to be able to assess perceptions of basic needs, resources, relational aspects and even subjective elements and were developed in previous studies through fieldwork in Peru, Bangladesh, Thailand and Ethiopia (McGregor et al., 2009). To do this and to assess wellbeing in a holistic way, methods focused on the relationships between the resources that individuals and households have at their disposal, the needs and goals that they are able to satisfy and the processes people engage in to achieve

these things (Copestake, 2011). Different components of WB lend themselves to different types of study and WDC is able to incorporate mixed methods to bridge the different disciplines involved to produce comprehensive and comparable data at the individual or household level (Alkire, 2008). For example agency and values require concerted qualitative study. But studies addressing basic needs may employ quantitative research without using qualitative techniques.

Although the suite of actual methods employed by SLF and WDC studies may appear more similar than I portray here, SLF research in contrast could even be conducted through questionnaires requiring yes/no answers without providing the space or opportunity for respondents to express their own conceptions of livelihoods or subjective aspirations and values. This is not to say that a deductive approach precludes the use of qualitative methods, but the list of concepts and categories put forward in the framework does not require in depth study of people's perceptions of or feelings about abstract concepts such as culture or autonomy. This can be interpreted from the claim that "The key for any intervention in support of sustainable livelihoods is to identify the institutional matrix which determines the major tradeoffs (between, for example, types of 'capital', livelihood strategies and sustainable livelihood outcomes) for different groups of people and across a variety of sites and scales and so the variety of livelihood pathways available," (Scoones, 1998). While Scoones and other scholars of the livelihoods approach (Ellis, 2000) recommend use of both qualitative and quantitative techniques in the study of livelihoods, livelihoods research is also quick to declare that it is often too burdensome to incorporate both into a project and therefore warns that a balance is needed. In fact that balance is regularly quite heavily weighted towards more quantitative techniques with closed questioning rather than qualitative methods which may be less restrictive in the components of livelihoods or wellbeing covered: "In work of this sort the principle of 'optimal ignorance' must always be applied, seeking out only what is necessary to know in order for informed action to proceed. The framework discussed in this paper may help in such an investigation by acting as a simple checklist of issues to explore, prompting investigators to pursue key connections and linkages between the various elements," (Scoones 1998). Whereas qualitative methods such as focus groups may be employed in SLF work, their use tends to be more of an information gathering exercise to understand context which effectively acts as a group interview rather than

an open discussion investigating the interaction between participants and the variety of views at hand (Ellis, 2000).

2.5 The two approaches applied to a Rwandan case study

In this section I introduce a case study undertaken in 2011/2012 in rural Rwanda. Data were collected through methods compatible with both SLF and WDC approaches as described above. I therefore seek to present the types of data which would be collected through application of each framework and to focus on areas where they contrast and discuss differences in the outputs and the types of conclusions which may be drawn from each of them. There is uncertainty regarding the types of methods which may be most commonly applied to the WDC approach, and in this case (and for this thesis) largely discursive methods building qualitative data were attributed to the WDC approach, being semi-structured interviews rather than standard questionnaires.

The study was conducted at three sites in western Rwanda, each of which consisted of rural settlements, in mountainous terrain and adjacent to areas of natural forest. The sites differ however and are graded in their remoteness and levels of infrastructure, including paved roads, public transport and employment options. For example at one end of the scale the site is very remote, with no paved roads, no public transport and very few employment options beyond agricultural labouring, while at the other end of the scale, the site lies on the main highway between the capital, Kigali, and Bukavu in the Democratic Republic of Congo, with frequent buses, trade opportunities, tourism industry with numerous hotels and employment opportunities through a large private tea plantation. Such criteria for site selection have been evident in SLF case studies (Ellis 2000). I conducted semi-structured interviews with a minimum of forty households at each site along with a minimum of two focus groups. Semi-structured interviews included the collection of consistent data which would be comparable to a household questionnaire and some of which were used to form quantitative variables. For a fuller representation of the methods see sections 3 to 5 of this thesis.

The first difference lies in the space given to local conceptualisations of wellbeing or livelihoods. While preliminary field methods for SLF tend to use focus groups as an information gathering exercise, a means to list the types of resources people have, the types of changes occurring and local

institutional arrangements (see checklist in Scoones 1998, pg. 8), the first step in a study using the WDC framework seeks to understand what wellbeing means in the local context and what people consider to be the important elements of it. Focus groups in this sense can be used to understand the dynamics between different people and levels of consensus regarding ideas put forward, functioning as more than simply group interviews. In the case study I conducted focus groups in eight different villages across the three study sites. Some elements perceived consistently to be important for wellbeing were unsurprising, such as food, income from work and health. Some were surprising by their omission: Education levels were very low (and are consistently included in objective measures of poverty (Alkire and Santos, 2011)) but education was not prioritised as an element of wellbeing. It was considered as being important for children, for their future in a competitive labour market. Therefore SLF methods may place a greater emphasis on education than WDC might in this example and could also develop different findings and recommendations concerning poverty based on that assumption. Others elements, put ahead of education or credit, were surprising by their inclusion. Examples were: a) the freedom for people to act as they wished in pursuit of their goals and pursue them unhindered by rules and b) good social relations and the occurrence of sharing between households. These issues, although potentially considered under institutional factors, are best explored qualitatively and are likely to be subordinated to more material or measurable aspects of livelihoods under SLF research.

SLF methods revealed a wealth of information regarding livelihood resources including the dual needs of land and livestock for manure to grow crops, changes in soil types and productivity, the variety of occupations people engage in to secure income, the limited local access to firewood and construction materials, and the importance of infrastructure for trade. However, as discussed earlier in conceptual differences to resources, WDC methods further highlighted a number of aspects to social and cultural resources. Some of the tangible resources put forward were shown to have deeper cultural significance, which varied between socio-ethnic groups. For example land had a cultural significance as it allowed people to practice the highly developed systems of polyculture, farming multiple crops with overlapping planting time and harvest cycles, to deal with environmental variability and uncertainty and to minimise times of hunger. This system did not develop to maximise income or working days which may be

emphasized by the SLF, but instead fulfilled a number of functions important to primary basic needs, and also for relational and subjective wellbeing.

While social resources would be considered in both approaches, their treatment would differ considerably (White and Ellison, 2007). SLF tends to seek to define households as insiders and outsiders depending on their ability to mobilise social relations to their material benefit (Ellis, 2000). However a broader look at social resources and people's motivations for investing in them can reveal the degree to which such sharing of resources actually affects wellbeing and also uncover more detail about the local relational context. In this example the cultural significance of land and particular crops such as bananas, their importance for social interaction between households as a foundation for further exchange and relations was emphasized by the more holistic WDC approach.

Social resources may also exert a negative influence and in the case study individuals in polygamous relationships (involving 10% of the 165 households) suffered particular dissatisfaction with elements of their lives due to the conflicting expectations of individuals. The unspecified nature of the 'institutional matrix' in the SLF means that it may cover all aspects of informal, social and cultural institutions and their positive and negative influences on the behaviour and wellbeing of different types of individual to provide a quite holistic look at people's lives. Yet in practice livelihoods research has instead focused primarily upon the institutions responsible for implementing or modifying agricultural and economic policy and social issues such as polygamy may be afforded less attention.

Analysis of wellbeing or livelihood outcomes does not show a clear or consistent trajectory or pattern, neither across different components nor across households. Many indicators of aspects of wellbeing show that poverty is decreasing rapidly, even multidimensional measurements (Alkire and Santos, 2011). In some areas, such as health, housing and education, poverty has been alleviated through government policies to increase their provision and standard in rural areas. However, land and livestock sales have been common among many and the number of people dependent upon agricultural labouring appears to be increasing. Further investigation of farming practices and land quality, as performed in many SLF studies shows that most households farm purely for subsistence but have developed other income streams as crop trade has decreased. Increasing

population, more intensive land use, decreased soil fertility and falling land holdings are commonly expressed reasons for the loss of crop surpluses. Access to natural resources such as firewood, but also construction materials and mining opportunities have become restricted over time as private and public ownership of non-agricultural land has been more strongly enforced. Questionnaires consistent with SLF methods capture these trends and apparent dichotomy in changes in aspects of living standards. To this end, government policies to manage natural resources more sustainably, to increase education and health provision, to promote growth in the agricultural sector and production of crops for export markets, as well as a villagisation program to encourage livelihood diversification and service provision can all be seen as very viable strategies under the SLF. These strategies may help to increase capitals, to address issues of falling soil fertility and land holdings and to encourage households to pursue strategies of diversification and intensification which promote positive livelihood outcomes. Continued use of traditional farming systems may be seen as unsustainable in the face of falling land holdings and productivity. The investment in rural development may provide the means to increase output and potentially to increase the number of working days or to increase infrastructure and to begin to generate more off-farm employment opportunities. The generalisation of behaviour and outcomes which follows the SLF highlights that a large number of households have sought to diversify incomes and to intensify agriculture. Many have planted trees for trade or begun to work in plank and charcoal production or to trade from shops, either goods or beer. Some have intensified agriculture through the use of chemical fertilisers and new types of seeds. The switch to a more intensive monocropping system or to grow cash crops like tea has been highly influenced by government policies which have also brought in formal land registration and provided seeds and subsidised fertilisers to grow approved crop types. Differences between the three Rwandan sites support these conclusions as the area with strong infrastructure and market linkages contained more people with diversified incomes, more able to afford health insurance, households were less reliant on collection of natural resources being able to afford modern substitutes and more people were able to trade crops to earn an income.

As may be expected due to the different questions posed and outputs sought by SLF and WDC, as outlined above, application of the two frameworks provides quite different results regarding wellbeing or livelihood

outcomes. From a WDC perspective the outcomes people are able to achieve and particularly the way people feel about those outcomes, their level of satisfaction with the subjective goals they themselves establish tells a quite different picture to that drawn by an SLF analysis. While national poverty indicators were improving rapidly, the majority of people in this study felt quite the opposite, and some of the reasons for those feelings related particularly to cultural aspects and freedoms. The focus on multiple basic needs rather than indicators of material poverty revealed the frequent and increasing incidence of households being unable to grow or afford sufficient food. For example, although a household may be seen to be intensifying agriculture, they may not perceive they are better off:

Village G, household 17: *"People here are not allowed to grow sweet potatoes and cassava now because of the crop intensification program. That has been imposed on the whole village! But prior to that we could grow sweet potatoes and beans so that when the beans don't grow well we can rely on the sweet potatoes to give us a harvest. Mixing crops is a good strategy for me and for many people."*

Village C, household 2: *"People are worried about the tea plantation project here. It has already started and we worry a lot about that. I don't know how to survive when the land is covered in tea. I don't know what will happen. And it's already happening! You can see some people's land already changing. We are told that the land is still ours, but that's really not the case. People with tea get no income, it all goes to the government. These people with a small plot of land that can only produce 10kg of leaves. It won't be easy to make any money."*

Finding sufficient food also depended upon social relations as sharing within villages represented a substantial redistribution of resources to those least able to meet basic needs themselves. Investigation of basic needs highlighted difficulties for many in affording medical insurance, of seeking firewood illegally on a daily basis and in maintaining a shelter with poor access to construction materials. However, although these issues were highlighted under both SLF and WDC frameworks, the cumulative effect on a household of being unable to meet multiple basic needs and the impact on agency and satisfaction with quality of life was emphasized only by the qualitative focus of WDC research and the consideration of agency and its influence on behaviour. While the inability to meet basic needs had some material cause and effect, there are also further wellbeing impacts through the relational and subjective dimensions.

Village C, household 8: *"It is very hard to bring up the children so I can't think about doing anything big or getting a new husband, no one would have me. Nothing can change for us. I don't even think about the possibility to change work or make any plans here."*

Village C, focus group discussion: *"I was born into (gupagasa) manual labour with a small income. Up until now that is all I have been able to do. And I will die doing the same thing."*

Agency and autonomy are strongly linked (Sen, 1985) and the combined effects of decreasing wellbeing and numerous pervasive government policies which contributed to this in the Rwandan example resulted in a perception of extremely low levels of wellbeing among the majority of rural inhabitants, particularly regarding their own freedom to act. This has been revealed by other authors researching life satisfaction (Abbott and Wallace, 2012). In turn the lack of autonomy created the perception of increased uncertainty over land tenure and housing ownership and left many people unable to act, to invest or engage in activities such as housing improvement, purchase of trading stock or agricultural investment because of a fear of being unable to realise benefit from it, representing a decrease in agency, which in turn can have relational effects on a households.

Village D, household 20: *"I just wish we could do some farming here, that we could get some land to grow crops on. We are living in fear here because the house is becoming old and crumbling. We need to build another one, but we don't expect to stay here if I'm honest. The tea is coming. We can be evicted at any time."*

While issues of autonomy may be considered through SLF as part of understanding context through secondary literature, through analysis of institutional factors or even discussed as part of the vulnerability context, it is unlikely that this would be pursued as a strong theme through livelihoods research because in this case autonomy was being restricted by the very policies which sought to promote the strategies and pathways towards poverty alleviation and resilience as considered in the SLF. Autonomy was being restricted by a wide range of policies actually aiming to promote modernisation of rural areas and development of their inhabitants through wider economic growth, which became a consistent theme of the research under the WDC approach, one which had not been predefined or expected (sections 4 and 5). If the goal of development is indeed to increase

capability, this raises very important questions about the impacts of development policy, (and quoting from Sen's (1984) writings on negative freedoms) of whether rural Rwandans "should not be stopped by others from doing what they have a right to do," in this case from continuing to live where they have been living and wish to remain, and in growing the food they perceive as being most likely to help them meet their basic needs and possess knowledge of how to successfully cultivate.

The different types of results stemming from each of the two research approaches influence the recommendations which may be drawn. In Rwanda any research method looking at the lives of rural populations is likely to highlight issues related to land as population density is extremely high. From analyses, SLF might recommend improved land rental markets and land access for poorer households, means to improve productive outputs across seasons through technical support and resource provision, to support subsistence agriculture as well as market-oriented production. However in the long-term SLF might prioritise investment to promote access to non-farm income opportunities as is being facilitated through increased levels of education. WDC would be much more likely to focus on the autonomy issues highlighted by respondents and changes occurring in social relations which both appeared to be quite integral to people's satisfaction with their quality of life. The cultural attachments to land and the intricate links between cultural practices, land use and relations between households received greater focus and therefore the potential costs of policies with a quite economic focus seeking to fundamentally alter farming systems, practices, crop types, knowledge utilisation and even the organisation of settlements may be brought to the fore. The results of such study may therefore be utilised to encourage adaptation of policies to encourage accommodation of cultural knowledge, greater participation in local decision making, promotion of techniques able to enhance traditional farming methods or to promote agency through establishment of associations.

Because of the additional emphasis on basic needs, the WDC approach is also likely to provide more insights into the trends and impacts of chronic poverty both materially and in terms of agency and relations, when compared to the SLF. (This is perhaps ironic due to the attention paid by wellbeing research to what people have and can do, rather than focusing on the negative aspects of poverty (White and Pettit, 2007)). The policy

recommendations might therefore focus on numerous aspects of basic needs and possibilities to directly address them (particularly food scarcity and changes in traditional food production systems) rather than strategies more rooted in economics seeking to increase off-farm income opportunities and training, which form a more indirect approach. Instead of scaling up towards average households when considering outcomes as in SLF, WDC may therefore focus more on the needs, material and otherwise, of the poorest individuals.

Village D, focus group discussion: *"Getting health insurance is a problem. We haven't even started paying for it because finding that much money for us is not possible. There is famine here, the disease we have is hunger and we have to start treating that before we can think about dealing with other health problems!"*

SLF does explicitly consider sustainability, resilience and vulnerability as outcomes, which are not put forward by WDC. But although mention is made that these could be to an extent defined by the research subjects, their definition is restricted to material and environmental understandings and is most likely to comprise normative definition. The question of who defines sustainability or vulnerability is important because perceptions of poor villagers may diverge with those of development professionals. Externally applied definitions may convey reductions in vulnerability or increased sustainability due, for example, to a measured increase in the diversification of incomes. However, from a local perspective, that change may represent an increased vulnerability to cultural and social change or even to external price changes or hunger, which clearly negatively impact wellbeing. In this area the SLF has received criticism for an inadequate regard to power relations in terms of whose knowledge is considered valid and whose strategic interests are given greater weight (Zoomers, 1999).

2.6 Discussion

The description of the SLF and WDC frameworks, and of the case study data they produce clearly shows their different objectives, approaches to knowledge generation and results. The two approaches each draw their foundations in large part from Sen's capability approach (Sen, 1984) and in doing so provide a means to interpret complex rural contexts beyond highly reductionist or econometric approaches. But the SLF and WDC interpret the capability approach differently and have distinct epistemologies and

methodologies which stem from it. Their aims and strengths are quite distinct from one another and they should therefore be used in quite different circumstances. That the forerunners of the SLF such as PRA stemmed from environmental science and economics plays a key part in those differences and gives a much more restricted yet targeted scope which endeavours to produce policy recommendations. The SLF asks how institutions mediate the productive assets people have in a community, how the distribution of them varies, which livelihood strategies people engage in, how sustainable they are and how the situation in that community or area is changing. In contrast WDC is a more holistic conceptual framework seeking to encompass what it means for different people to live well in a certain context and how dynamic relational, subjective and material dimensions combine to determine an individual's ability to meet basic needs and satisfaction with their quality of life.

The SLF is a relatively objective framework with outputs designed to appeal to policy makers and to maintain a relevance to economic theory. In doing so it has been a valuable tool in identifying key trends occurring for rural populations in developing countries, such as increasing livelihood diversification. SLF research has been applied successfully in a number of circumstances, enabling a much more cross-sectoral approach than had previously been seen to livelihoods (Ellis and Freeman, 2004, Scoones, 2009). SLF did not provide in depth social and cultural understanding of individuals or vulnerable groups in society, nor did it develop new theory of rural livelihoods, but it drew on fine scale knowledge and analysis of local institutional practices to reach conclusions and provide policy recommendations (Ashley and Carney, 1999). It was particularly good at seeing where institutional arrangements fit poorly with people's economic development (Scoones, 2009). There is also further room in the framework to broaden its scope to non-material dimensions and, importantly, to issues of relative power through the ambiguity afforded to 'institutions and organisations'. The framework may also be applied to give more weight to individual perspectives and subjectivity as both wellbeing and poverty are afforded space within livelihood outcomes and local context and social differentiation are both terms included in the framework. Due to the rapid changes taking place in developing countries, widespread attempts to improve governance and the need for institutions to adapt to changing economic and environmental conditions, the SLF still has a valuable place in development research.

Sen (Sen, 1999) gave several reasons for the need for new approaches to research: variation between individuals, variation in the environments in which they live, differences in social context between places and differences in the social behaviours between people. SLF addresses variation in wealth and natural resources yet seeks to generalise more about other aspects based on economic strategies employed. In seeking policy relevance, this may be viewed as a strength because, although the WDC may capture greater variation in subjective factors and individual motivations, drawing patterns and ascertaining 'ideal types' to enable clear conclusions or policy recommendations is difficult to achieve without generalising to the extent that some of the more individual stories are overlooked. Despite the objectives and foundations, use of qualitative data is quite limited in livelihoods work and this component could be enhanced in the framework to strengthen and make more robust the results it provides. This may be particularly important in recognising the influence of power in policy processes.

The simplicity and ease of replication of the SLF, partly enabled through the focus on more objectively measurable aspects of people's lives made it an easy approach to professionalise, being able to identify material differences, key trends and possible solutions rapidly, with minimal resources and capacity constraints. In this sense SLF studies are easier to perform and replicate because, although involving economics, social and environmental sciences, SLF is less multidisciplinary than WDC, which incorporates psychology, political science and anthropology, and the fields of study and likely research outcomes are more rigidly defined.

However the narrowing of the SLF to consider a limited number of economic strategies essentially generalises across rural communities to such a degree as to lose an individual or household level focus and foster a regional scale economic perspective. That is engrained in the epistemological approach of SLF. It therefore ignores subjectivity and the role it plays in determining goals, behaviour and satisfaction. The dichotomy between the foundations, stated objectives of SLF and the actual research approach has been criticised in that it actually "mystifies differences between households," rather than serving to clarify areas of complexity or highlight detail in relationships (Gough et al., 2007).

Through design inputs by policy makers SLF is influenced by wider development goals of economic growth. Although the extent of focus on institutions and organisations is somewhat ambiguous in the SLF, poverty reduction and agricultural policies may ultimately have been endorsed through livelihoods research as they seek to align people's behaviour with strategies of modernisation, increasing yield, soil and habitat conservation and also meet specific poverty reduction indicators. If through this lens the general trend is seen to be one of environmental sustainability and economic growth (the pathways ideologically engrained in the mainstream development thinking) those people whose motivations, values and behaviours fall outside of those predetermined ways of acting may be overlooked and their concerns and interests marginalised in the research conclusions. Environmental sustainability and resilience are themselves contested terms and an individual's behaviour may be viewed as unsustainable or as increasing vulnerability if they seek to meet a household's subsistence needs rather than contributing to soil conservation and increased food production on a regional scale.

Social research has moved forward since the initial establishment of SLF and development aims to give adequate consideration to social and cultural impacts of change. This has also been necessary due to the rapid increase in global-scale interactions, creolisation of cultures and the importance of the relative power of groups of people in determining livelihood choices and trajectories (Ashley and Maxwell, 2001, Sullivan and Brockington, 2004). Adapting the SLF to include cultural resources (as Bebbington (1999) has recommended) and broadening its scope to consider a greater variety of behaviours and outcomes could provide improved application. To effectively encompass social dynamics and relative positions of power, the institutional and contextual elements of the SLF require more elaboration and explicit theoretical foundation (De Haan and Zoomers, 2003, Du Toit, 2005). With further development the SLF could gain widespread use in providing standardised tools for monitoring social-environmental interventions, such as REDD+ and climate change impact assessments.

Such standardisation may be more difficult to realise with the current WDC framework. The WDC framework has a much broader scope than the SLF to look at the kind of life an individual perceives as being meaningful and subjectivity is a major difference between the two. The inclusion of subjective elements of agency, social relations and culture on the values

applied to resources, outcomes represent a strong point of the WDC approach. This greater detail allows for a more actor-oriented and holistic level of research, which can provide a detailed understanding of what people believe constitutes a good quality of life, why individuals act as they do to pursue it, what causes households to move into and out of poverty and how poverty and wellbeing are experienced from an individual's point of view. Results of such research can be surprising and less predictable than the SLF approach, meaning that it is most suitable for research with very broad and flexible objectives and time frames.

The WDC seeks to understand the ways in which people perceive and themselves describe social realities, not to observe the social phenomena and apply more rigid categories to them (Kanbur and Shaffer, 2007). This is considered to be more appropriate in wellbeing work because an individual's ideas of what constitutes wellbeing and the goals people set to attain it may ultimately be the drivers of behaviour (Coulthard et al., 2011). Such additional considerations may be important in the design and evaluation of interventions or may simply influence our understanding of the ways in which poverty or wellbeing are conceptualised and experienced by the people living in developing countries (Copestake, 2011).

The breadth of WDC research places it ideally to provide understanding of the potential costs of policies and interventions or to monitor impact of policies or changes on people's lives in a multidimensional way, which is complementary to and even necessary to provide alongside the use of large-scale indicators. It can therefore be a very important research method to run alongside widely used development indicators such as Millenium Development Goals. Whereas SLF scales up and generalises the situation individuals and households face, the WDC methods maintain their focus on the individual. This is used to look at the variation involved in what people have, what they wish to be able to do and what they are able to do and be and it is this variation in detailed stories which may inform the basis for intervention. Although not mentioned in this paper, attention to issues surrounding marginalised groups, ethnicity and gender are critical to development research and the points made here for the greater depth of insights provided by WDC apply equally to these important areas.

Wellbeing frameworks are intended to guide development work, reveal people's values, increase transparency and focus interventions (White,

2009). However a major restriction of that has been, as Scoones (1998) makes clear, that "*holistic conceptual frameworks, no matter what their intellectual merits are, are not necessarily good guides to intervention*." Because of its wide foundations, broad scope and subjective dimension, wellbeing is difficult to research, and to research consistently. For example cultural and social capital or resources are misused concepts, rarely well defined, and often differentially applied (Fine, 2010). Additionally the relational dimension means that factors such as relative poverty and power may influence a person's satisfaction. And furthermore past events and cultural practices can influence aspirations and local populations may have their own basis for classifying information and taking decisions (Fairhead and Scoones, 2005, Satterfield et al., 2000). There are many aspects to wellbeing research, which causes difficulty in focusing on one area and drawing clear, easily interpreted or applied results and the results of qualitative research are perhaps less generalisable or readily accepted into policy than the straightforward message delivered by numbers or basic statistics.

There is a need to broaden development research, to more often represent local perspectives (Roe, 1999). There are still many failings in development due to these shortcomings, even though those very same problems gave rise to the SLF in the first instance. Those simplifications and oversights still exist whereby policies are put forward with little monitoring or even space to consider those perspectives. The methodologies associated with the WDC approach, which span several disciplines, have the potential to reconcile the needs of local users, many of them poor, with the wider objectives and values inherent in the system, those held by development professionals, policy makers and donors. Widespread adoption of such methods may help to address issues of power and facilitate the pursuit of more just outcomes. While those methods are perceived to be complex and difficult to put into practice, they may not be so burdensome to apply and may yet become more aligned with the requirements of policy makers.

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3. "*THE CULTURE CHANGED AND BECAUSE OF THE NEW VISION OF DEVELOPMENT IT HAS TO*": THE INFLUENCE OF CULTURAL DIFFERENCE, POWER RELATIONS AND DISCOURSE IN REPRODUCING OUTCOMES IN RURAL RWANDA

"The culture here is to come to people's aid and help one another if in need. But we Twa have our proper culture that is different to ordinary people, because we have a different history. Ours was of hunting and gathering in the forest. So when we were taken from the forest we tried to adapt to a culture different to our own, finding other livelihoods. At the beginning it felt like a big loss to us. We were suffering and we were unaccustomed to this new culture. But now we feel like it was the right thing to do." (Village H, focus group discussion).

3.1 Abstract

This paper explores differences in culture and relative power between rural Rwandans and the implications of those differences for the outcomes people are able to achieve and the impacts of development policies upon them. In doing so it utilises concepts of power and habitus alongside a multidimensional view of wellbeing. From focus groups and interviews in two locations, three socio-ethnic groups are considered: long-term residents, post-genocide returnees from the Democratic Republic of Congo and Twa pygmies, an indigenous group, many of whose livelihoods were until recent years strongly linked native forest. Not only did material wellbeing and cultural meaning differ between groups, but policies promoting de-ethnicisation to achieve reconciliation between ethnic groups and those promoting modernisation of rural areas served to emphasize differences and resulted in reproduced outcomes for those groups. The Twa suffered low levels of relative power and particularly acute difficulties in meeting basic needs. However ethnic labels were not consistent predictors of behaviour and variation existed within groups and between sites. While common practices and dispositions could be generalised for some people, exceptions were numerous and individuals from all groups exhibited agency to improve their situation or to suffer poverty due to adverse circumstances.

3.2 Introduction

People's lives are complex. While much of the thinking and research which underpins development policies is limited to material aspects, more comprehensive characterisations of wellbeing examine subjective values and ways of acting alongside a consideration of power and how it may enable or restrict the outcomes people are able to achieve (White, 2009). These additional aspects of wellbeing reflect differences in the ways people think and act, which do not always relate to predictable material goals, but are also shaped by their individual experiences, personalities and their interactions with others. This paper will explore these complex and interrelated aspects of wellbeing among rural inhabitants in western Rwanda. A holistic definition of social wellbeing is applied to identify material and cultural differences between groups and consider the influence of their history, values, practices and relative positions of power on their quality of life. The insights provided by this analysis are used to discuss their implications for development policy, which is shown to be having profound, transformative and yet contrasting positive and negative impacts on the lives of different people. Particular emphasis is given to the wellbeing of the Twa, an indigenous group, many of whom occupied areas of native forest until recent decades.

Recent media representations and development literature about Rwanda have focused on the overwhelming development successes in areas of health, education, security and in building institutions (IMF, 2011, Clark and Kaufman, 2008) representing a huge turnaround from the decimated position of the mid-1990s. Economic growth has been consistently high for almost a decade, foreign investment has increased greatly and the proportion of the overall population suffering income poverty has decreased from 57% to 45% between 2006 and 2011 (NISR, 2012). Rwanda tops the list of sub-Saharan African countries in progress towards meeting Millenium Development Goals (UN, 2013) and aims to be a middle income country by 2020. These indicators reveal a dramatic revival since the mid-1990s and represent an undeniably positive series of achievements. However, alongside these documented successes, levels of inequality are high and some studies have found rural poverty to be prevalent and potentially increasing (Ansoms and McKay, 2010, WFP, 2009). Therefore the impacts of development for rural Rwandans, the vast majority of a rapidly growing population, are unclear and monitoring of the numerous policies

implemented sheds little light upon this critical question (Holvoet and Rombouts, 2008). In order to attempt to answer this question it is first important to consider some of the historical, political and cultural context to the lives of rural inhabitants.

Rwanda has seen rapid change post 1994 when ethnic division and conflict left the country in a state of devastation. There were large shifts in population in 1994 and subsequent years as many Hutu left, particularly for the Democratic Republic of Congo (DRC) as the Tutsi-led Rwandan Patriotic Front assumed power in Rwanda and spread westwards, and returnees who had been absent from Rwanda, sometimes for generations, poured in from neighbouring countries. These returnees had to be resettled and integrated in the country and administration and infrastructure rebuilt. Alongside this process of rebuilding, the state sought to enact a very difficult reconciliation between socio-ethnic groups. The method of doing so has been to remove any reference to or practices emphasizing ethnic difference, including in political representation, civil society and social policy, a move which equates to de-ethnicisation (Purdekova, 2008). Indeed the mention of ethnic difference in daily life is punishable and can be deemed to be an incitement of ethnic division and spreading of genocide ideology. These laws have been used in numerous contexts, including to exert control over the media and political opposition (Waldorf, 2011, Reyntjens, 2011).

A strong vision for the unity of Rwandans has been put forward to ensure future internal security (O'Connor, 2013, Clark and Kaufman, 2008). This vision of Rwandan-ness incorporates modernisation, development and market orientation and these goals are often repeated through radio, frequent local meetings, *ingando* education camps, *umuganda* monthly community service, and appointment of local information officers, all organised to enhance unity (Purdekova, 2008). This rhetoric attempts to persuade people to fulfil their potential to contribute to the national economy and to modernise housing, trade buildings and centres, maintain standards of hygiene, embrace new technology, send children to school, have a bank account, medical insurance, take credit and form cooperatives.

Foucault (1991) introduced the idea of governmentality to address the different means by which a population is governed and conceptualised the

process as occurring through institutions and norms but also through discourse and the forming of identity. Ferguson and Gupta (2002) draw on Foucault's ideas to describe the extent of influence of these different processes of government in terms of a) verticality, referring to a state's position above others and how top-down processes of decision making are, and b) encompassment, or the pervasiveness of the state's influence in every arena of a person's life. High levels of both verticality and encompassment are strongly evident in the way Rwandans are governed. A Rwandan proverb which has been used to represent local perceptions of state influence explains that "the ruler's drum is louder than the people's shout" (Des Forges, 2005). The structure of government, with appointment of local leaders rather than election and consistent enforcement of laws with fines for non-compliance and targets provided to local leaders for implementation of policies designed in a highly centralised manner with minimal participation or scope for adaptation, means that the state's influence is dominant in every village in the country and pervades to many aspects of Rwandans lives, extending even to appearance and hygiene (Ingelaere, 2011).

The current Rwandan population consists of three main ethnic groups: a majority of Hutu, minority of Tutsi and less than 1% Twa. However, in Rwanda there are also strong regional identities based upon local historical and environmental factors and cultural values therefore vary greatly within what is often now classed as an ethnic group and overlap between them (Des Forges, 2005, Newbury, 2001, Vansina, 2005, Prunier, 2008). The lives and culture of Hutu in the plains of the east are likely to differ substantially to those in the mountainous west. Tutsi survivors of the genocide who remained in Rwanda are likely to have different cultural identities to those who returned from Tanzania, and in turn to those who returned from Uganda, many of whom had never set foot in Rwanda, their ancestors having emigrated sometimes generations before. All of these cultural meanings and practices have now been touched by global factors, meaning that distinctions are even less meaningful without comprehension of local context (de Lame, 2005).

The starting point of this study is to consider three separate groups, given relevance to their locations. Based on observation in the two study sites, I argue that reverting to simple ethnic labels of Tutsi and Hutu precludes a deeper understanding of cultural difference, so instead distinctions are

drawn initially between long-term rural inhabitants to these mountainous areas, those who have returned to Rwanda from more fertile, less densely populated environments in the DRC, and the local Twa. To collectively term the returnees from DRC as Tutsi, alongside other returnees who may have spent their entire lives in a different country would seem to represent an unsupportable labelling, and the same must also be said of the longer term residents. While the Twa are referred to as such, their distinction from other groups is unique and every effort is made to explore further differences within that group in this study. Both study sites contained all three main groupings. Within each of these groups there will also be further subdivisions and differences, which will be discussed progressively below.

The results of research from six villages in rural Rwanda are presented as follows:

1. The most identifiable cultural groupings are described with reference to shared histories and current livelihoods and land-use practices, but paying particular attention to the position of the Twa.
2. The relative wellbeing of groups is assessed, using quantitative indicators to look at relative socio-economic status.
3. Qualitative data is used to look at variation in conceptions of wellbeing, relative positions of the groups and the impact of associated forms of power on the quality of life they are able to achieve. However, rather than generalising across crudely identifiable ethnic denominations, and accepting the resulting generalisations, the analysis looks to emphasize difference within groups and to compare the two sites to highlight inconsistencies as well as consistencies in the wellbeing of different groups.
4. Finally the implications of these relational processes are discussed with reference to the bold visions for reconciliation and development being followed by the Rwandan state.

3.3 Concepts

The analysis presented below integrates concepts of wellbeing, divided between interrelated material, subjective and relational dimensions (White, 2009, Gough and McGregor, 2007), Bourdieu's theory of social practice (Bourdieu, 1977), consisting of dispositions, fields, habitus and doxa, and

the three forms of power described by Lukes (Lukes, 2005): coercive, agenda-setting and discursive. This section will describe each of those concepts and the linkages between them, providing a rationale for the subsequent analysis.

Subjective wellbeing incorporates the idea that two individuals will apply different meanings to resources, will develop varying aspirations and may be differentially satisfied with the same objectively measured quality of life (Copestake and Camfield, 2009). The meaning applied to resources and outcomes can be seen to vary with individual agency, a person's feeling of competence to be able to act in pursuit of their objectives (Deci and Ryan, 2000). That agency, particularly of the poor is often overlooked both through studies emphasizing material aspects of wellbeing and those emphasizing the importance of relational factors, such as structural power (Hill, 2003). Rural inhabitants in developing countries (often generalised as 'the poor') are able to make choices in how to act to meet their individual goals, for example by transforming development interventions, so as to make sense to their own cultural and material objectives rather than the promoted market orientation (Leeuwis et al., 1990). However there is no such thing as a completely autonomous person, one who is unaffected by the lives of others (Comaroff and Comaroff, 2001) and aspects of subjective wellbeing can also be termed intersubjective, being dependent on interactions with others. Social relations and cultural influences on a person's feelings and ways of acting are a key aspect in the subjectivity of wellbeing (Gough et al., 2007).

Culture develops in response to certain social or environmental conditions faced, taking the form of shared meanings and repeated practices. Shared cultural meanings therefore often relate to places but, where people move, this may include remembered places which can arise from past experience or even imagined places which are built through both interactions with others and discourse (Gupta and Ferguson, 1992). Cultural meanings are dynamic and changeable being subject to renegotiation within a group, and also entail external influence, such that most modern cultures are also influenced by globalisation and consumerism (Clammer, 2005). In sub-Saharan Africa the economic, social and political impacts of colonialism created different classes and identities which affected cultures differentially (Young, 1994). Global interactions have had a continuing and increasing influence, in part causing livelihoods to have diversified in many developing

countries (De Haan and Zoomers, 2003). Taking on elements of other cultures can be described as resulting in cultural creolisation or hybridity (Hannerz, 1992). Exposure to new cultural influences can create new ways of being and be transformative (Appadurai, 2004) but may also cause partial erosion of aspects of culture which conflict with it (Gupta and Ferguson, 1992). These ideas regarding individual agency and culture are used to differentiate the ways in which people and groups in rural Rwanda act in pursuit of their wellbeing.

The way in which an individual acts in social situations can be considered to be a set of dispositions or habitus. Dispositions are influenced by a set of interrelated traits, not solely cultural factors, but also past experience, socialisation and upbringing (Bourdieu, 1977), and therefore link strongly to agency and subjective wellbeing. These dispositions are affected by the perception of relative positions to other actors in social situations or 'fields', again connecting the subjective element of wellbeing to the relational. Dispositions may be durable over time and transposable across social arena and this is one of the means by which outcomes such as poverty may be reproduced (Bourdieu, 1990). Dispositions are also affected by 'doxa' or the dominant ways of thinking and discourse, introducing the role of structure and particularly dominant institutions on either local or global scales. The wealth of concepts described here overlap strongly and for the remainder of the paper I will seek to maintain a consistent use of a limited number of them. Therefore discourse or discursive power will be used to also represent doxa.

Relational wellbeing also reflects that wellbeing is a "state of being with others," (McGregor et al., 2009) and is heavily influenced by relations with people, groups of people and institutions. Groups who apply different meanings to ways of living and acting often occupy different relative positions of power in society. This reflects and results in differences in the recognition of their needs and wants by people and institutions, their ability to participate in decisions affecting their lives and therefore in the outcomes they are able to achieve, material or otherwise. Poverty may therefore be seen in part as the consequence of social categories and unequal power relations between them (Green and Hulme, 2005). This introduces a strong structural and relational aspect to the quality of life people are able to attain, suggesting an importance in considering the role of different forms of

power in determining both processes and outcomes (Spivak, 1988, Gramsci, 1990, Foucault, 1980).

Power can be considered in three related forms: coercive or visible power, agenda-setting power and discursive power (Lukes, 2005). The coercive form refers to the ability of people or their institutions to explicitly and consciously determine, modify or control the behaviour of others based on their own interests (Lukes, 1974, Dahl, 1957). The agenda-setting form considers the way decisions are prioritised and subordinated through the organisation of people's interests, whether conscious or unconscious (Bachrach and Baratz, 1963, Lukes, 1974). This may occur because certain beliefs or practices are judged to be contrary to generally accepted norms, or because the identities of certain groups are ignored or even reinvented for people through the reframing of history or redefinition of culture (Li, 1999). This links to the third, discursive form of power. The development of ideology or false consciousness through information, mass media and other forms of discourse can cause people to act in ways which appear contradictory to their own interests. Through the alignment of interests and behaviour with a hegemonic view, subjective meanings and ways of acting may be altered, either negatively, proving contrary to an individual's interests, or positively, by inspiring a wish to change and proving transformative (Appadurai, 2004).

In bringing these three forms of power together and recognising that power does not only arise in tradeoff situations where conflicting interests are evident, Lukes (2005) takes steps to reconcile the more visible forms of wielded power with Foucault's (1980) consideration of power as an abstract, unwielded and changing force, related to knowledge and relations on different levels, alongside Scott's (1986) ideas about subtle forms of resistance in response to discursive influences. The latter conceptualisations of power restrict its role to a discursive and unintentional element, one which is incompatible with ideas of individual, intentional power (Hyden, 2008), but Lukes' multiple forms of power broaden the scope to allow for agency. They are also compatible with Bourdieu's theory of practice as the concept of habitus and associated dispositions which form it may be influenced on many levels, not only through discourse, but also through interactions with others, an individual's upbringing, and other factors influencing that person's agency.

Essentially discourse forms the element of governmentality with which the analysis is most concerned. However this study explores not only state-driven interactions but those between groups of people and institutions at a range of scales. The coercive and agenda-setting forms of power offer further explanatory potential for exploring the outcomes which different people and groups may achieve. The dispositions which people exhibit in different fields are then used to tie some of those individual characteristics, cultural differences and power relations together.

3.4 Methods

Research for this thesis took place in three districts (Figure 1.1). However for the purposes of this paper, only two of those research sites are included: Nyamagabe and Rutsiro (Figure 3.1). Concentration on these two sites enables greater detail to be presented about social groups and clear links to be drawn with the concepts described above. The third site, in Nyamasheke district was an economic centre next to a main highway which attracted many migrant workers from within Rwanda, whose origins varied more widely.

This paper therefore presents results of mixed methods research from two rural areas in western Rwanda: one in Nyamagabe district in the southwest and the other in Rutsiro district in the northwest (Figure 3.1). Both were remote, mountainous areas lying over 2,000 metres above sea level, without paved roads and with very limited public transport (the area in Rutsiro was serviced by daily buses, but that in Nyamagabe had none). Both were adjacent to areas of native forest, the depleted 6km^2 Gishwati Forest in Rutsiro, for which restoration schemes were under way, and the well protected 1,000km^2 Nyungwe National Park in Nyamagabe. Agriculture was the dominant occupation in both areas, contributing to the income of all but three of the 115 households interviewed.

There are 30 districts in Rwanda (Figure 3.1) and these are divided into districts, then cells for administration and finally into villages, which in rural areas generally consist of between 100 and 200 households. Research for the purposes of this paper was undertaken in two villages in Nyamagabe district and, due to the greater segregation of cultural groups, in four different villages in Rutsiro. Between 15 and 20 semi-structured interviews were conducted in each village (12% to 17% of households in each village) with respondents selected at random from lists provided by local

administrators. A focus group was also conducted in each village with a random sub-selection of five to seven of those interviewed to understand local conceptions of wellbeing, perceptions of levels of wellbeing and important elements of change. Interviews consisted of a number of open questions to explore people perceptions and more subjective elements such as culture, agency and perspectives of change. Qualitative data were analysed thematically in line with the concepts and sub-concepts described above. However interviews also included consistent topics of conversation and the collection of consistent demographic, socio-economic data and a number of indicators of basic needs. These are described in greater detail in an overview of methods in the introduction, section 1.5 and also alongside Table 3.1 below, in which they are presented.

Interviews and focus groups took place with either household head or spouse. 42% of interview respondents were male, 58% female and 19% of those households had a female head. Focus groups always consisted of both male and female respondents. As such the influence of gender on wellbeing was not overlooked, but due to the focus on household activities and outcomes, gender difference only emerged as an important factor in instances in which division or conflict occurred within the household or for those households with only a female head.

Figure 3.1. Map showing the two districts in which study sites were located, adjacent to Nyungwe National Park and Gishwati Forest.

The research was performed under permit from the Rwanda Development Board. This work was not part of a concerted effort to study the ethnic differences central to much of Rwanda's history, which may be deemed illegal. Relations between and feelings towards ethnic groups were not explicitly studied and specific incidents during war were not covered as I instead focused on the post-genocide experiences of the respondents. Rather the research aimed to assess wellbeing of and important changes occurring for households in rural Rwanda and, although no questions were posed addressing ethnicity, the themes of cultural difference were glaring in data collected. Respondents described their own cultural influences, ways of acting, aspirations, relative power relations, ability to participate and their differential wellbeing outcomes.

3.5 Background: A brief history of three socio-cultural groups in western Rwanda

3.5.1 The Twa

There are estimated to be approximately 80,000 ethnic Twa across the Democratic Republic of Congo, Uganda, Burundi and Rwanda, with around a third living in Rwanda, making up less than 1% of its population (UNPO, 2011, Lewis, 2000). The Twa had occupied Rwanda's forests since at least the 7th century and consider themselves Rwanda's original inhabitants, using the Kinyarwanda term *Abasangwabutaka* to mean people who live from the land (Zephyrin, 1999). Much forest had been lost in Rwanda by the early 19th century due to conversion to agriculture and this trend continued during colonial times. From the 1970s to the 1990s, this was done on a much larger scale through development projects converting forest lands to pasture, tea plantations or military zones and remaining forests were increasingly protected as national parks. Thousands of Twa were rendered landless, without compensation (Huggins, 2009). Legislation adopted in 1974 also prohibited fishing, hunting and animal trapping, on which Twa livelihoods depended and they instead relied on agricultural labouring, transporting goods and crafts such as pottery for their livelihoods (UNPO, 2011). Although clear differences remain they have been linguistically and to an extent culturally aligned with other non-Twa groups in Rwandan society. Under reconciliation laws they are not allowed to be distinct or identified and even organisations supporting them are not allowed even to mention the word 'indigenous' (Beswick 2011). However, they maintain elements of their distinct culture in songs, dances, stories and artefacts and are considered to meet United Nations' definitions of indigenous peoples (Huggins, 2009). The term "Abatwa" originating from the Kinyarwanda word "Abatware" meaning people with authority, actually means those over whom authority is wielded (Turyatunga, 2010). Others have been documented to characterise Twa as backwards, unintelligent and lazy, dirty and uneducated (Vansina, 2005, Thomson, 2009). Discrimination and abuse is common to the extent that Twa school children have been documented to hide their ethnicity, for fear of their treatment by students and teachers alike (UNPO, 2011). Thomson (2009, 320) reports one Twa opinion regarding the de-ethnicisation:

"*One Rwanda for all Rwandans is maybe a good idea for Tutsi and Hutu, but not for us Twa. Even the mountain gorillas get more protection. They after all bring in tourist dollars. We will get rubbed off the face of Rwanda before they do.*"

In Rutsiro district, the three broad socio-cultural groups were quite spatially, socially and economically segregated and their villages had separate chiefs, meetings and administration. Gishwati Forest, now largely found in Rutsiro, was greatly reduced in size from around 70,000 hectares in the 1980s due to conversion to grazing land as part of a World Bank funded development project, which made no provision for compensation to displaced Twa. But although many Twa were removed from Gishwati Forest in the late 1980s and early 1990s, the area was not strongly protected. Many again inhabited the forest or bordering areas during and after conflict in 1994. The conversion of forest land to agriculture and widespread extraction of timber in the absence of regulation reduced the size of the forest to just 600 hectares (Plumptre et al., 2001). When protection was reinforced as institutions functioned again, the Twa were gradually removed from Gishwati Forest, with some claiming only to have left the forest as recently as 2008. The Twa settlement, although forming a distinct cluster of houses on a separate hillside to those of long-term residents, was considered part of the same village and the village chief was non-Twa.

In Nyamagabe district, in the southern province, as part of nationwide attempts to improve housing standards in 2011, Twa families from nearby villages were told to leave their grass-rooved homes and move to vacant houses, where they lived alongside returnees from DRC. The majority of the approximately 100 households of returnees alongside a minority of Twa were perched on a separate hillside to long-term residents. These Twa had lived within or on the edge of Nyungwe Forest for many generations. Many were evicted from the forest with increasing protection in 1988 (Zephyrin, 1999). Although traditional forest uses were then outlawed with widespread sensitisation programmes reinforcing the message, enforcement of these rules was only increased substantially when the forest was declared a national park in 2003.

3.5.2 Returnees from DRC

Rwandans had moved from western Rwanda to the Kivu region in eastern DRC in waves over many years, the first being in the late 19th century when the king's heavy taxes and severe laws caused them to leave (Chrétien and Banégas, 2008). They became named the 'abanyamurenge' after Murenge, the adopted capital in Kivu that the first movers in any large wave settled. Subsequent waves occurred partly to work and to escape famine during Belgian colonisation in the 1940s and 1950s, and then notably following the post-independence demonstration of Hutu power from 1959 to1961 during which 150,000 tutsi fled (Pottier, 2002).

Kinyarwanda speakers in the Kivu region in eastern DRC were not always treated favourably. A 1981 law even withdrew citizenship for those of Rwandan origin and this made it easy for others to recoup land they had or felt they had lost, often by violent means. Their support of Mobutu during his regime was not appreciated by his successor, Kabila. Uncertainty and insecurity escalated and the 'abanyamurenge' lacked representation (Pottier, 2006). As the Rwandan Patriotic Front (RPF) assumed power in the second half of 1994 many Rwandans fled the country, either from the hutu militias who fled to the west or, in their case, from the RPF themselves.

Many 'abanyamurenge' returned in 1994-1996. After initially being accommodated in refugee camps, these Kinyarwanda speakers were repatriated to different parts of Rwanda. In some instances common lands or protected areas were degazetted for them and in others, long-term residents were obliged to share their land to accommodate them (Takeuchi and Marara, 2009, Musahara and Huggins, 2005).

In Rutsiro returnees from DRC were initially placed in camps once they were resettled in 1995/96, receiving some aid in terms of food and water. Each household was eventually allocated a hectare of land, primarily parts of Gishwati Forest which had to be cleared of vegetation before they could cultivate. Although many chose to leave the area, gradually a village was constructed for more than a hundred families who remained and the camps were removed. Returnees were commonly referred to as 'abanyamurenge' by other groups.

In Nyamagabe, the returnees from DRC had originally re-settled within Rutsiro and close to Gishwati Forest. However the large-scale conversion of forest land and pasture to more intensive crop farming had negative impacts and rainy seasons in the late 1990s caused extreme landslides and flooding with loss of land, homes and lives. The returnees from DRC were then rehomed far away in Nyamagabe, initially in camps but later provided with houses and each given a hectare of land from the large areas of common land which were left from a past, discontinued development project. Despite the provision of homes and land, many found the transition to the new area and the challenges of subsistence agriculture on poor, acidic soils very difficult. The vast majority chose to leave for other parts of Rwanda, to return to DRC or to return to the refugee camps, which were still functioning. Those who remained were commonly referred to as "people who came from Gishwati" rather than 'abanyamurenge'. After most had abandoned the area, the government sought to rehome returnees from Tanzania at the site instead, but all of them left and so Twa were brought in to fill the empty homes.

3.5.3 Long-term residents

Long-term residents in Rwanda also faced hardships. From independence in 1959 to the 1970s population density more than doubled and harvests per capita decreased accordingly (Chrétien and Banégas, 2008). Farmers sought to diversify with labouring, cash crops and trading goods newly appearing through more globalised markets. A crash in global coffee prices in 1989 and economic hardship had severe effects. The government failed in its bid stabilise prices of key crops such as sorghum and international help was sought including a structural adjustment program (Pottier, 1996). However in the subsequent years first the RPF's initial invasion was repulsed and then the genocide followed. In mountainous rural areas in western Rwanda there were very few people considered Tutsi and conflict around the genocide tended to be based on class grounds and other local tensions such as land disputes (André and Platteau, 1998).

The long-term population in Rutsiro area were primarily smallholders practising polyculture, growing a variety of crops on the steep slopes outside of the forest. However until the land was allocated to returnees, they had also made use of the forest for resources such as building timber and for cultivation in the fertile unexploited soils. Despite seventeen years

having passed before this study, villages were still largely segregated with only three of twenty respondents in the village of returnees in Rutsiro from other groups, recently married longer-term residents who had moved in to their first homes. And similarly only two households were found to be returnees among 40 interviewed in the two villages consisting of long-term residents.

Although most long-term residents in Nyamagabe were dependent on subsistence agriculture, a small number had been brought to the site in the 1980s as either workers for or participants in a large-scale European Commission funded development project called 'Crete Zaire Nil' (CZN) or Congo-Nile divide, named after the ridge of mountains running through the adjacent Nyungwe Forest, made National Park in 2003. As part of the project, families were provided with large areas of land, housing, livestock and trees to plant to enable long-term sustainable living without damaging forest resources. In this remote area in the mountains, the nearest market is far to travel by foot and few vehicles make the journey by road, so selling crops is mostly on a local level.

3.6 Results

3.6.1 Socio-economic differences between groups and sites

Although the numbers presented in Table 3.1 do represent aggregates, and variation existed within the three broad socio-cultural groupings, the differences between the three categories were stark in terms of the economic and natural resources they possessed and the outcomes they were able to achieve. Land and livestock holdings were negligible for the Twa, while being clearly highest for returnees from DRC, with long-term residents between those two.

Table 3.1. Socio-economic data by broad socio-economic group and study area

	Social/ethnic groups			**Study areas**		
	Long term residents n=72	Returnees from DRC n=27	Twa n=16	Nyama gabe n=40	Rutsiro n=75	Average
Average size of land held by household in hectares (standard error)	0.72 (0.13)	1.78 (0.37)	0.22 (0.06)	1.20 (0.30)	0.74 (0.11)	0.89 (0.13)
Own 1 or more cows	42%	55%	6%	38%	41%	40%
Trade of crops	37%	26%	6%	50%	19%	30%
Grow trees for trade	28%	52%	0%	15%	37%	30%
Food scarcity*	27%	52%	94%	53%	37%	43%
Very basic small house*	15%	18%	59%	35%	15%	21%
Collect firewood illegally*	63%	52%	100%	57%	83%	66%
Without medical insurance*	49%	26%	29%	28%	48%	41%
Government pay med ins for household	11%	7%	71%	13%	23%	19%
Average education of household head (years)	3.3	3.9	1.5	4.5	2.5	3.2
Average education in household (years)	6.1	10.3	3.8	7.4	6.4	6.7
Female headed households	13%	30%	29%	13%	23%	19%

* These indicators for basic needs are described in detail in section 1.5. Food scarcity reflects whether a family must go at least one day per month without a single meal. A very small, basic house was judged to be a building with walls made only of earth and sticks with only one main room. Households collected firewood illegally if they were unable to afford to buy it, grow it on their own land or be given it and therefore faced uncertainty and risk in being able to cook and provide heating. Health insurance cost RwFr 3,000 (approximately £3) per person in a household in 2011/2012 and was not valid until every person in the household had fully paid. Those unable to afford this cost, and who were not provided with free insurance, were very unlikely to be able to afford access to medical assistance.

Land holdings also appeared to differ between sites. For those households brought to Nyamagabe as part of the CZN project, in addition to receiving land, options for work with the project were also common, as was tenure

over unused land after the project ceased operating in 1993. Six of these households were interviewed as part of the random sample and their average land holding was 2.9 hectares as opposed to just 0.27 hectares for the other 23 long-term residents sampled in Nyamagabe. This group therefore formed a substantially wealthier class of about 40 households in the area, some of whom had been able to accumulate sufficient wealth to send their children to private schools and acquire more land and livestock and who provided labouring opportunities to others in the area. This drives the difference in average land size between study areas (Table 3.1). Yet despite that relative wealth among a minority of long-term residents and the fact that returnees had arrived as refugees resettled with few assets, average land holdings were considerably higher for returnees.

Land is a crucial resource in being able to meet a number of basic needs: to produce enough food for a family to eat, to provide an income to enable them to meet the costs of medical insurance and also to buy or to produce materials for house building and household fuel. The poverty faced by Twa households is evident in that 94% face food scarcity, going at least a day a month eating no meals (and often much more frequently than that), 59% live in very small, basic constructions despite many having been provided houses by the government and 100% of them are reliant on collecting firewood illegally, being unable to produce or afford to buy any (Table 3.1).

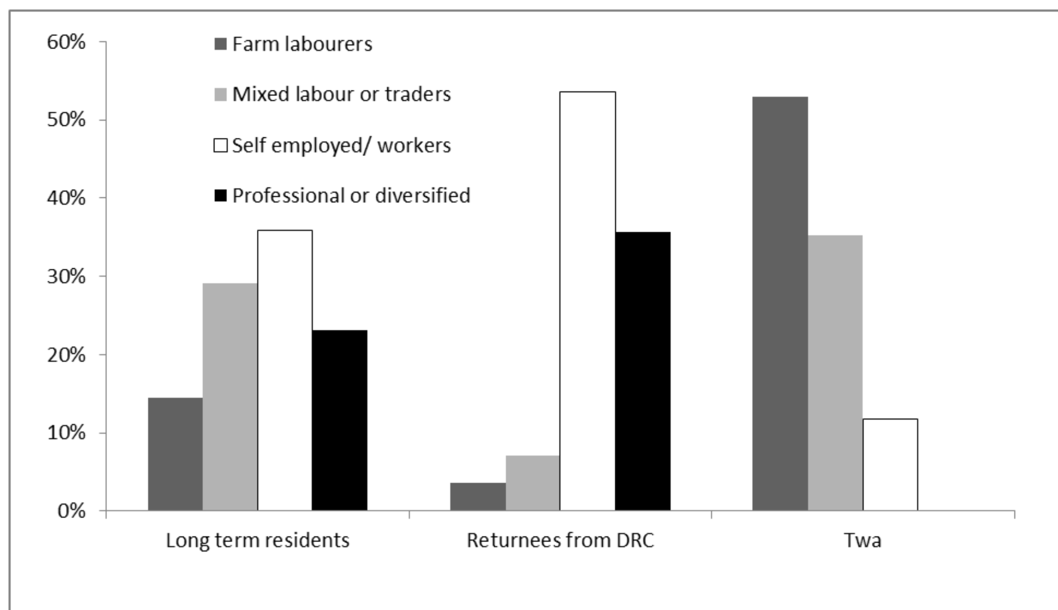
A large number of households from the other groups also struggle to meet basic needs, notably 52% of returnee households suffering at least a day per month with no food at all (Table 3.1), despite 23 of the 27 households sampled owning a hectare of land or more. This may be explained by differential land use choices between the groups, which formed an important component of their cultural practice.

The main occupations households engage in provide a strong indication of the variation in socio-economic position between households in each of the three groups. More than 25 different income strands were identified in the two sites, and these were reduced to four categories ranging from a) lower paid activities such as agricultural labouring or transporting goods; b) more regular or higher paid labouring options such as tea labour, charcoal making, trade of small goods, beer or milk or shepherding; c) trade of own edible crops, trees, cash crops, running a shop or taxi or d) professional occupations such as administration or local government, teachers, mechanics, guest house owners or diversified households who gain income

from three or more streams in category ‘c’. Figure 3.2 illustrates the strong differences between the three groups, with more than half of Twa households dependent only on agricultural labour, transporting materials or collecting grasses, as opposed to only a very small minority of returnees and less than a fifth of long term residents. For some Twa in Nyamagabe pottery was a key livelihood activity providing a small income to supplement labouring. This depended upon access to clay-rich soils from wetlands rather than forest resources, but modern alternatives have reduced demand and access to clay has also become more difficult as wetlands have been extensively converted to agriculture (Lewis, 2006).

Returnees overwhelmingly occupied the higher two livelihood categories with 37% of households receiving income from professional or diversified occupations.

Figure 3.2. Occupations across the three broad socio-cultural groups



3.6.2 Results from qualitative research

There were differences between the three main socio-ethnic groups in their conceptions of what it meant to live well and this was expressed during focus groups held in each village. Both returnees and long-term residents placed land as the key resource required to live well. Land is not only an economic resource but also has social, political and cultural connections (Hitchcock and Vinding, 2004) and different choices in land ownership and land use are indicative of some cultural differences between the three

groups. In general, returnees favoured pastoralism and tree planting over the polyculture practised by most long-term residents evidenced by the fact that only 26% of returnees traded crops, a far lower proportion than long-term residents despite their greater land holdings.

3.6.2.1 The case of the Twa: "*It has all changed. There is none of the old culture left. All people are Rwandans now*."

Conceptions of wellbeing for the Twa rested not on land as for the other groups, as they were quick to sell what holdings they had, but more on finding adequate labouring opportunities to provide an income (Figure 3.2). They also placed an emphasis on access to natural resources from non-agricultural habitats, particularly forest areas, despite hunting and other forest uses having been prohibited for many years. For many Twa households, the forest played a very clear role in their cultural difference and conservation had significantly impacted on their livelihood activities, cultural practices and their wellbeing outcomes. Although many Twa had been removed from Nyungwe Forest in the 1980s, those in Gishwati had inhabited it more recently, some only being removed in the past five years. Even once removed from forests and provided with areas to establish villages, their main livelihood activities often centred on collecting and selling forest resources to non-Twa such as firewood, material for ropes, honey, medicinal plants and bushmeat. Recently increased protection of both forests meant that the risks involved in forest activities increased and so their practice reduced rapidly. Although in Nyungwe the main reason for this change was biodiversity conservation, in Gishwati the resettlement of returnees alongside the forest and allocation of forest land to returnees to farm had severe consequences. Although Twa could find some employment in clearing and then working on those plots, their own longer term livelihoods were threatened and with increasing forest use among adjacent populations for grazing and timber extraction, the forest size dwindled to just 600 hectares.
Village H, focus group discussion: *"That (the forest) was our source of livelihood, where we got everything and we do not find any alternative. To go into the forest and to feel the good air and atmosphere there even. It is better than the air you can feel outside. Our culture is starting to disappear. Like knowing how to look for honey, our children no longer know how that is done. When you saw a bee, you had to follow it until you reached the hive. Then you*

know there is some honey to be had there. Imagine if you got there now, you would find honey dripping to the ground. Imagine how the honey is in the forest now, imagine how big the francolin (partridge type birds) have become. They can't even move they have become so big!"

Village H, focus group discussion: *"The forest now is for the government and for people who got jobs in the forest.....they told us to protect the forest. So it is them who must know what their benefit will be from it. We hear that those white people are from America and they give money to the government. So do you think the government is sharing that money with us? For us we can only look at it like a poster!"*

The Twa face challenges in participating in local decision-making and in finding representation for their grievances (Kidd, 2008, Huggins, 2009). The needs of the Twa play little role in the local or global political agenda and their own possible trajectories appear far removed from the vision for development put forward by the Rwandan state. At both sites, they were acutely aware that their own activities were not proven causes of deforestation and perceived that they had been treated unjustly through that process and in terms of compensation. With increased conservation measures in place, now all Twa, even those living alongside forest areas see it as being comparable to "a poster", something they can see but which offers little more to them than aesthetic value. Honey was one of the resources most important to Twa but none are involved in the honey cooperatives which were established after forest protection. And despite the feeling that the forest was well managed when they used it, that they played little part in its destruction which led to the prevention of access, they felt no potential in seeking or being permitted any type of forest use in the future.

Village H, focus group discussion: *"If they allowed us to go into the forest, what would be the problem? When we used to go into the forest to hunt and to take firewood the forest was well maintained. There was no effect! If they don't provide any alternatives for those things we used to be able to acquire there, they have to allow us to go back in there. Because we didn't even harm it in any way when we used it. It's not us who destroyed it! It was the people who allocated the forest to the abanyamurenge and they cut it all down. When we used the forest it expanded down to the village here now."*

Village H, household 13: *"It was the government who took us out of the forest at that time. In the beginning we were worried about how to survive outside. Before I took rope and my husband found firewood and we sold them around the villages for food. We were worried, but we realised we had to go everywhere the government took us. We had no choice in that."*

Although many of the evicted Twa were provided with land and latterly with housing, their unique forest-based cultural practices meant that suddenly adapting to becoming farmers and living within enclosed walls was not an easy transition. Therefore simple labouring activities became the most common livelihood for them. At that time, many of the Twa in Rutsiro were in a similar position regarding material assets to the returnees having been provided land and housing. Yet instead of being able to adapt, accumulate and become aligned with the dominant culture, or alternatively to seek representation to enable them to negotiate a suitable outcome for them, the majority sold their land and spent the money, seeking jobs collecting grasses or carrying charcoal and materials when they needed money again. The lack of experience or cultural attachment to agriculture and the feeling of incompetence to manage land effectively led them to seek work from others rather than pursue their own production.
Village H, household 7: *"We weren't given any alternatives to help us adapt or survive. We were told to go and find work or to create some jobs but we weren't trained or oriented towards anything. Since that time it is as if the Lord has helped us to survive. People with a small hoe used them to start farming and to get a wage from it of 500 for a day. Potatoes were not expensive at that time, so we could manage to eat on that wage."*

Through their trade or exchange of forest goods, the Twa had always interacted with other groups outside of the forest, but were treated as far from equal. There had been a substantial change in the way Twa were treated by others, but this had gone from outright physical abuse and discrimination to mere discrimination.

Village H, focus group discussion: *"Nobody here gets beaten anymore without any reason. We could be struck by people as we were accused of stealing. Or even people would say 'what right do you have to be taking this path?' and could beat us. We couldn't take those cases to anyone to seek justice because they were the*

very people who would beat us. But now that no longer happens and we can seek justice and find it, as people who have committed crimes can be punished.

Although many state that their values have changed and that they seek to live in a similar way to other Rwandans, many find it extremely difficult to do so, struggling even to afford soap to be able to correspond with the more accepted, modern ways of living.

Village H, focus group discussion: *"We can now manage to cooperate well with people who aren't Twa. They don't despise us or find us repulsive as they used to. They found us unworthy. We have now improved our hygiene. We did our best to do that. But the problem has been to find soap. That is difficult sometimes. In the past our being dirty was a very big problem for others. And the only clothes we could find were old ones that were thrown out by the previous owner….We no longer have to be put into quarantine in our own country now."*

Additionally Twa are still actively discriminated against. Coercive power exerted over Twa may be diminishing, but is still evident. The new forms of interaction which the loss of occupancy and use of tropical forest has demanded represent new 'fields' or situations to which they must respond. But old dispositions are engrained in that, from both sides.

Village H, focus group discussion: *"They (non-Twa) try to look happy that we are there (attending ceremonies) but they don't treat us the same and don't give us anything. We have to thank them because even those small, poor things they do give us we could never actually find ourselves. But we have given up going to attend those ceremonies because of the way they treat us like intruders, giving us the leftovers only. They no longer reject us outright but when we go there and buy a drink or receive one, these people, they find it very hard to drink from the same bottle as us. Although before we couldn't go there at all."*

Even from the small sample of Twa households in this study, there were examples from only the past five years of significant amounts of wages, livestock and equipment being stolen collectively from the Twa by non-Twa who acted as organisers of cooperatives and projects for them. The ease with which they were exploited and their relative powerlessness to seek justice is a big barrier to achieving their aspirations.

Village H, focus group discussion: *"Some people still consider Twa as those who aren't educated and are ignorant of how to manage things. But they have to know that nowadays we are open-minded and have changed our way of thinking. Now we know that if we receive money we have to be able to manage it*

and everyone here now knows how to count. One day people brought us a few radios and the person who directed them to us said that those pygmies won't know how to use radios, so they took them away from us. Many of the things sent to us don't reach their destination. Instead they stay in the pockets of the greedy people with big bellies."

Although they have become more accepted by others and are now able to find jobs as agricultural labourers, they are not considered for higher types of work.

Village H, focus group discussion: *"Sweeping doesn't require somebody with school qualifications, or at least to be a guard you don't need a high level of education! Even the guards there at the sector offices are no stronger than us. They are the same like us but we aren't chosen for that work, you can't find a Twa working there. Having a sustainable job doesn't require just education, your ethnicity is a factor."*

Village H, focus group discussion: *"Most of our problems we have now can be solved by finding regular work…… In the past there were no jobs either but at that time we could find a livelihood from the forest, we didn't need a project then. When we go to ask for jobs in the tea project they refuse to give them to us. The job that provides a good wage, they don't give that work to us Twa….. The job that is paid well is provided to rich people only. And another problem is that supervisors tell us in order to get a job we need to pay a small bribe to them."*

While occasional dancing for tourists provides some income, that activity is very much in the hands of others and they perform when told and only for money, using otherwise rarely played instruments made of modern, available materials such as old food cans rather than the forest resources.

Village H, household 1: *"Sometimes they tell us to prepare and dance and they give us Rwf20-25,000 (£20-£25), but I don't find it any help. We have to share that between 40 or more families. That's about Rwf300 (30p) per house. What good is that!?"*

The Twa culture is not hybridising with other cultures as much as it is being lost, or subsumed by others. Many still rue that lost connection to the forest as the cultural knowledge is eroded and fades. However, conversely their limited opportunity means that some do try to revert to forest activities to meet basic needs. The provision of medical insurance for a number of

years left many unable to identify medicinal plants. Recent changes demanding their contribution towards medical insurance left many of them with little choice but to try to find medicinal plants, describing their attempts at finding the correct species as having *"to delve into traditional plant medicines and kill ourselves using them,"* (Village H, focus group discussion).

In Nyamagabe, where Twa had been moved in to houses formerly occupied by returnees, they lived alongside other groups. In those instances there was no report of physical abuse, but the same dispositions occurred, whereby neighbours would tell Twa to go and collect grasses for them or to find firewood for a small amount of money. They found few alternative livelihood options. And when they went without food they would rely on asking others to feed their children. Having given up their local connections and interactions with other Twa where they had previously lived by agreeing to move, most were keen to return to their old home, despite their improved housing conditions.

It is unsurprising that Twa did not feel part of the process of modernisation and development envisaged for the wider population. Despite recognition of the benefits of provided housing, particularly to health and the survival of children, these changes were not considered to be representative of any further improvement in their material wellbeing.
Village H, focus group discussion: *"Even though we were given houses, we have no tools or equipment in the houses. We have no chairs, no plates, no mattresses, no beds. Generally all the equipment you would need in a house is lacking. We have none of them! We have lots of fleas in our beds and are scratching ourselves all night. One chair is shared around the whole village when guests like you come. We sleep on beds of eucalyptus leaves (all agree and look longingly at the shoddy bed in the corner, which doesn't even fit the mattress well). We try to use the few things we have in a way that they can last a long time. Like the one cup we have we try to preserve it. The way we cope is to use grasses or eucalyptus leaves instead of beds and we replace them with new ones when they are old. We borrow each other's chairs or we sit on stones or blocks. We don't have any tables in the houses. Nobody has a table here. Food is put on the earth. The saucepan we have is used for both cooking and for washing clothes. The plates are very old and they are pierced in the bottom everywhere.*

We would also borrow saucepans and plates. We wait for one family to finish eating and then we go and borrow them from them."

However, wellbeing and cultural aspects were not uniform for all Twa in the study. It would be false to claim that all Twa placed importance on forest use and harboured feelings of injustice about their eviction from the forest. There were considerable differences in the meaning of culture among them. Whereas some have only been recently removed from forest areas or may even still practice some forest use, others have never known these connections in their lifetimes. Twa may move between areas and many in Rutsiro had come from semi-urban areas to the newly formed settlement, often where some family members already were, in the hope that they too may be allocated land or housing. Others had even lived only a few miles from the forest, yet it played little part in their lives. In trying to discuss a common culture among Twa, focus groups revealed frequent disagreement about forest importance and what they should and could aspire towards, with a minority who had demonstrated little knowledge of the forest suggesting that conservation was necessary and that they should not be allowed to return. Additionally the arrival of more Twa from outside of the area had led to resentment between groups in the face of limited jobs and housing.

Village H, household 13: *"People always shared things from the forest, and after leaving too. But as people came here from (towns) they created some misunderstandings. They don't get along with people and the sharing and good relations have disappeared now."*

Despite inequality of opportunity for Twa, the lack of recognition of their culture and the prejudice and discrimination to which they are subjected, they are clearly affected by the discourse surrounding a new Rwandan culture. As one Twa put it, *"there is none of the old culture left. All people are Rwandans now,"* (village H, household 13). Although the rejection of their cultural practices has been imposed by rules and enforcement, the actions and aspirations of many Twa are affected by this discourse. And despite these unequal power relations and the challenges in even meeting basic needs, there were examples of Twa who displayed transformative agency, reflecting that the same dispositions and lack of agency is not consistent for all Twa. One man put himself forward as a forest guard and although he lost that job due to closure of the NGO employing him, he

refused to accept rejection from a tea plantation on the basis of his ethnicity. Instead he pleaded for a chance to prove himself in that job, which he was able to maintain and which may ultimately enable other Twa to do the same. Similarly one female household head fought and overcame corruption when she was denied access to livestock being donated to her on the basis that she would not pay the associated bribe. She sought justice at a higher level and although this required persistence and she was dissuaded at several stages, the police and district authorities eventually decided in her favour and she became the only Twa in this study to own a cow (Table 3.1).

3.6.2.2 Returnees from DRC

Although both returnees and long-term residents valued land highly, their aspired use differed as returnees readily changed their livelihood activities to take advantage of shifts in relative economic opportunities, many ceasing crop growing and instead planting trees to engage in the charcoal and timber trade (52% of returnee households, Table 3.1). The majority also reared cows (55%, Table 3.1) to enable them to consume and trade milk. As the majority of those returnees who had been resettled in the two areas decided to leave, the land they had been provided with was commonly bought by other returnees such that some of those remaining had been able to accumulate relatively large holdings compared to the other groups (Table 3.1), despite the reclamation of some of this land by the government for reforestation schemes.

Returnees were able to adapt and many able to accumulate resources additionally due to their ability to find political representation, and collectively influence decision making and therefore negotiate outcomes more suited to their experience and culture. Although they had initially needed to grow crops to subsist, returnees in Rutsiro were able to argue against a 2005 law to keep livestock caged at home, and were also able to convert crop land to pasture and wood lots such that the area took on an appearance scarcely seen in Rwanda, of rolling green hills and pockets of forest, where herds of cows roamed monitored by shepherds and enclosed with fences, in place of the patchwork of cropland that typifies the majority of the country. Despite their earlier refugee status and resettlement in unfamiliar terrain this exemplified a disposition regarding political representation. Their collectively negotiated position even went against the mono-cropping policies the government was implementing. Additionally,

education levels tended to be much higher among returnees (Table 3.1) and many more took professional positions, a large proportion of which were as local administrators with decision making powers. Some were also able to argue for compensation when the government expropriated people from land to commence the reforestation of the depleted Gishwati Forest. Based on their experience and past practices, they were able to negotiate a position without needing to alter their practices to align with the long-term residents of the area.

Village E, household 7: *"When they ordered people to put their cows in sheds a few years ago people found it very difficult to get any grass for them. People reported the problem that they had nowhere to plant grasses for them. So the authorities said that if you have land you can keep them there. People didn't really come together or anything. When people put them in sheds at home, the cows were becoming hungry. Disease spread quickly among them, they had problems with their legs….. Now, even though cows do stay out you can't find cows out wandering alone. …. People pay for a shepherd to bring them all together."*

The same disposition, a confidence to seek and organise political representation was evident in both sites. In Nyamagabe, as cropland was converted to tea plantations under the crop intensification program, returnees sought to negotiate for alternative lands in valleys to be opened up to them as an alternative to be able to grow crops for the household. Even among those relatively poor smallholders, the networks and political representation they could utilise were in stark contrast to the position of the Twa.

Village D, household 19: *"I am a member of that committee at the sector level. Any plan for change in the sector has to go through our committee, even decisions like hiring and firing anyone in authority."*

But this was not the case for all returnees. Many of those who were moved to Nyamagabe from the Gishwati area generally found their position extremely difficult. And a minority of returnee households in Rutsiro also found themselves in a position of poverty, struggling to be able to provide enough for the household. Therefore a substantial proportion of returnees, who despite greater land holdings failed to grow crops effectively, also suffered food scarcity (Table 3.1).

Across all of the three socio-cultural groups described, health problems, or death of a partner were common contributing factors to reducing people to a poverty trap, a daily struggle to meet basic needs. In 25% of households at least one adult was unable to work and in half of those cases the adult in question was less than 50 years old. This applied equally to returnees, causing difficulties in managing land to produce enough to eat or trade and restricting their options for work. Such additional hardships may have a severe effect for households living close to the poverty threshold. This manifested in lower levels of agency and reliance on friends and neighbours to provide in those times. Conflicts within a household could have a similar impact and a number of women in polygamous relationships suffered through uncertainty over and loss of assets still being controlled and often sold by husbands who had abandoned them for a preferred wife. Polygamy, recorded in as many as 10% of households, was the major issue recorded in this study through which gender resulted in differential wellbeing outcomes. However the focus on household activities may have masked further issues of gender inequality.

3.6.2.3 Long-term residents

The majority of long-term residents also placed land as a key resource determining their quality of life. However they were much more concerned about their ability to practice traditional forms of agriculture to ensure their subsistence and to minimise the likelihood of hunger through the changing seasons. They therefore voiced concern about their way of life being impinged upon through loss of soil fertility and inability to afford inputs. However importantly traditional practices were inhibited through the government's land policies which forced a change in land use away from the locally-favoured polyculture and towards a more intensive and centrally controlled mode of monoculture linked to national economic objectives and a vision of a modern, profit-making smallholder. Although long-term residents have diversified their livelihoods to supplement incomes or to make up for loss of income from crop production and trade, very few had been able to transform along the lines the government promotes. Only a minority were able to trade crops (Table 3.1) or could be classed as having diversified or professional livelihoods (Figure 3.2). Although their traditional modes of agriculture meant that far fewer suffered food scarcity than returnees, far higher proportions were unable to afford medical insurance

and depended on the illegal collection of firewood (Table 3.1). In reality many struggled simply to meet basic needs.

The long-term residents have developed cultural practices closely linked to crop diversity and local trade and sharing systems which minimise the incidence of hunger among a household and the wider population. These forms of local economic, social and political interactions, which are closely tied to and have been formed by local environmental conditions, shape the ways of acting of much of that group, which represents the majority of the sample population and possibly the wider rural population. This way of acting and the means by which it inhibits the accumulation of material wealth is quite contrasting to the vision of the modern, profit maximising rural inhabitant which is supported by government policies. And policies of land tenure reform, crop specialisation and villagisation have not only overlooked those needs and ways of acting but have sought directly to dismantle the social systems surrounding it (see section 5 for more detail). Those who are not able to transform their practices in line with the new modern farming model, have choices to break the law and face fines or eviction or to sell land rather than to grow new crops unsuccessfully. Although a wealthy minority could follow the new rules and afford feritiliser and buy food at market for household consumption, many risked fines and continued practising polyculture. Opinions about the changes imposed are reflected in the following four quotes:

Village G, household 17: *"The monocropping system is not good because in the past we would grow beans and cassava together. You could take the bean harvest and eat them and also to plant corn while the cassava was ripening. Then you would always have some food to eat, it was a good system. There were many different harvests we would get from that. But now if you harvest beans, as soon as you have finished eating them you begin to suffer from hunger."*

Village G, household 20: *"We go to buy seeds at the sector but they can't provide them to us unless we can afford to buy fertiliser too. Myself, I am not buying seeds from them because of that. In summary, I am not allowed to mix my crops anymore and the result is that we are starving here. The consequence of this is that we are suffering in poverty now."*

Village G, household 8: *"This soil could be good for sweet potatoes but the authorities REALLY don't want us to grow sweet potatoes. They do mind these crops too (taro and banana), but we need something to eat so we did it anyway."*

Village G, household 13: *"Yes! We are late in getting rid of our bananas. If the agronomist came here and saw we hadn't cut them we could be fined Rwf1,000 (£1)."*

The relations built around that type of land use are contrary to the vision of a modern Rwandan. Local authorities actively prevent traditional gatherings by which much sharing took place and local production of banana beer has also been prohibited. The loss of sharing between households was a very commonly voiced opinion.

Village D, household 18: *"The new leadership we have didn't allow people to carry on doing those things and we hated those changes that were brought about. Those cultural gatherings were important to people who took part in them."*

Village B, household 26: *"The culture though has really changed concerning the cooperation and love between neighbours, totally changed! In the past people produced banana beer and then called their neighbours. They cooked, drank and then ate all together, sharing, dancing and singing and practising traditional chanting. That has totally changed, no-one can even invite their neighbours round to share anything anymore, as they don't even have enough for themselves…. Now if you cook one sweet potato and are seen by your neighbour you have to hide because you need to eat that yourself. Now if you share some banana beer with someone it costs an extra Rwf200 (20p) and then the children waiting at home will have to go without food!"*

Village C, household 18 *"You don't get anything for free now. It's the problem of money, everyone is looking for money now. It's part of development! Because people have some money and power now, they are looking for more. And they have been told to think in that way now."*

But there was not consensus among long-term residents about the loss of cultural practices and developmental trajectory. Opinion was quite divided as a number of wealthier individuals and particularly young, educated adults from wealthier households were very dismissive of past traditions and felt part of the new movement towards modernisation.

Village C, household 2: "*There is a noticeable change in the way people act now compared to the past. When people went begging in the past, it was due to ignorance. They realised you can't depend solely on going around begging. It's not constructive to do that and it was a bad part of the culture. So now they*

realise that you need to work to receive anything or to take a loan and work that off later."

Village B, household 14: *"Those cultural things were bad. The old culture was worse because people worked without shoes, they built with grasses and it wasn't good. It's good that's gone. As people are no longer allowed to go to the forest, the things people would take from it are missing. But that shortage has been replaced by development."*

Local corruption also forms a barrier to some people's participation in formal state-sponsored social protection such as the donation of livestock. In turn, as they feel unable to transform to the new cultural practices envisaged for them or to farm single crops successfully, many households resort to selling land or livestock to meet living costs and become more dependent on the formal social protection available. Their own motivations and interests are excluded from the political agenda. Many had little hope of being able to live up to the expectations that go along with the vision of development. Similarly to the Twa, though less common, the majority of long-term residents relayed experiences of having been exploited and of local corruption proving a barrier to meeting their aspirations or to seek new ways to improve their lives.

Village C, focus group discussion: *"We don't really think cooperatives or associations could be a particularly good intervention to address our problems. They benefit only the leaders of the associations. They try to monopolise everything. Where you look at some of the remaining cooperatives, they are continuing because the members of them are rich. So nobody can cheat them or take all the benefits from them."*

Village G, focus group discussion: *"The local leaders call it the distributor's juice and that goes into their pocket. Here it costs 15,000rwf to get what is entitled to you. You have to pay rather than go without the cow! We have no choice about that."*

The levels of material poverty experienced in these areas also has an effect on people's feelings of competence to act to overcome that substantial barrier to achieving their aspirations, which inevitably settle on simply being able to find sufficient food, maintain their home or afford medical help.

Village B, household 15: *"We have no future plans because we can't work for much money. We can't rent any land because we don't have enough manure to*

make it worthwhile. The money we earn from our work doesn't allow us to do anything. If we did get money from the sale of our borrowed cow, we would wish to buy a cow ourselves, but the benefit we could get would never allow that. I wish the children could go to school and when they are mature they can find a direction, and work would be possible for them. But the health of my husband is deteriorating and our situation may become worse still if he can't work."

Village C, focus group discussion: *"I was born into manual labour with a small income. Up until now that is all I have been able to do. And I will die doing the same thing."*

Village F, focus group discussion: *"Some people have to run away from hospital because, although people are obliged to save somebody if they are sick and they need to do that even if they think they can't pay, then people run away. But when you do that, they come to your home and take your property afterwards."*

The majority of long-term residents displayed little faith in their ability to find representation or to be able to participate in those decisions which affect their wellbeing. Many perceived little choice but to follow government directives and some also voiced inconsistencies with the treatment of returnees.

Village G, household 7: *"People don't get any training here, those things are for the authorities and they just come here and tell us what to do. Like the decision to remove all crops and change to growing maize. There's no training or information, nothing comes with that order."*

Village G, household 12 (Regarding reforestation scheme in Gishwati): "*People who were born here never received any compensation. But those people from Congo who were given land close to the forest were able to receive a new land in compensation. Every household who came from Congo was supposed to receive a hectare of land each! So some people here have been able to accumulate a lot of land now."*

Increased forest protection had not only affected Twa households, but a number of long-term residents, whose livelihoods and cultural practices had also been quite dependent upon access to certain forest resources. Although a lesser proportion of households among non-Twa perceived negative effects of conservation, the monetary value of the resources they had collected was often much higher than the income Twa received from

their forest resources. Resources collected which had contributed to past incomes included gold and other minerals, weaving materials, honey, timber, as well as using the forest for grazing and cultivating.

Village C, focus group discussion: *"Imagine collecting grasses, not cutting trees, just taking grasses and being caught and beaten for it! That is a very bad change for us."*

Among long-term residents, as for the other two groups, individuals who were poor in terms of resources could still display high levels of agency and a willingness to engage with new methods and livelihood activities. This was particularly notable among young, healthy couples who, though not necessarily educated to a higher level, were keen to disassociate themselves with 'old ways' or 'cultural behaviours' and instead to seek new means to accumulate money. There were isolated examples of young couples with only less than 0.1 hectares of land, yet who sought to apply manure and chemicals, taking investment risks to ensure they maximised trade, while engaging in other livelihood activities to ensure they could afford food from market for themselves.

Although the majority of long-term residents were relatively poor and lacked agency to invest or benefit from development policies, there were notable exceptions. A proportion of predominantly wealthier long-term residents were beginning, and many had long ago begun, to adapt their land use, livelihoods and everyday behaviour to conform with the envisaged modernisation. 21% of those households owned more than a hectare of land, 37% had begun using chemical fertiliser and the same proportion were able to earn an income from trading crops. And 28% had also followed economic incentives and diversified to grow trees to trade. In Nyamagabe the long-term residents who had opportunistically benefitted from past development projects formed the elite of that area and were main providers of labouring opportunities to other inhabitants. This group voiced faith in benefitting from development policies and sought to progress by abandoning polyculture and adopting new crop types, diversifying jobs and in some cases sending children away for a better quality of schooling to maximise their potential opportunities to find work in the future. This group of residents represented the relative elite among those at the study site in Nyamagabe, having accumulated more land when returnees left the area and formed cooperatives for cultivating, livestock and for tea growing. The costs to join and maintain membership of such cooperatives was prohibitive

for most others, because they felt unable to consistently meet either intial contributions required or subsequent monthly subscriptions. This was a difference between the relative positions of groups between the two sites, and suggests that material wealth may play as much of a role in restricting the ability of households to accumulate greater wealthas the power relations associated with cultural or ethnic difference.

In contrast to the majority of poor long-term residents, this distinct group of wealthier long-term residents perceived a good level of representation and an ability to participate in decisions affecting their lives. This represents a clear difference within this socio-ethnic group and suggests that material wealth, human resources and their impact on agency are a key factor in the ability of an individual (or in this case a group with a shared pathway) to adapt to aspects of promoted culture with global influences or western values.

Village D, focus group discussion: *"Administration has changed a lot and we can now report any problems or difficulties without having to travel far. Only when it cannot be solved here do we have to go up to a higher level. Even when problems are not solved at lower level, the higher level leaders come here to help to solve them. The mayor can come here to find people to help solve the problem without us having to travel to (district centre) to figure it out. People no longer fear the soldiers or their leaders. They find them to be people who can help them, people they can relate to rather than simply people who will cause them harm."*

Village D, focus group discussion: *"If you need some trees like for cow sheds, you can write to sector agronomist and usually they will give the trees from the forest buffer zone to people. If you write and explain that it is an issue to do that. Nobody has been refused an allocation of trees for purposes like that."*

Their position contrasted with that of the returnees at that site and reflects the importance of collective groups in securing wellbeing outcomes.

Village D, household 20 (returnee from DRC): *"We aren't in any associations at all. We don't hear about any of them when they are established. We would like to join one but we are never informed about them. They are set up by people who have lived here a long time. They are a bit separate and don't tell us about what they are doing. Anyway, I doubt we would be able to pay it every month……There is no local representative or anyone to take your problems to."*

3.7 Discussion

People differ in terms of their knowledge, experience, aspirations and practices and are therefore affected in diverse ways by changes, be they environmental, social, economic or political. Yet factors such as varied histories, knowledge and cultural practices may be overlooked, unrecognised, disregarded or even discriminated against both by individuals, and by those with decision-making power.

Rwanda has undergone massive change since the mid-1990s and the government, supported by donors, has placed the country, including the most remote of rural areas, on a trajectory pursuing (and so far achieving at the national scale) economic growth, modernisation and extensive service provision to help meet poverty alleviation goals. These policies have been hailed as overwhelming successes (IMF, 2011, UN, 2013). The new set of policies represents a significant change in the lives of ordinary Rwandans and in that sense they have been undeniably transformative. This change has been sought through pervasive, highly centralised policies and the vision of the modern, developed Rwandan is prevalent in discourse, disseminated through many forms. Material accumulation is not entirely new to rural Rwandans and even remote areas have been influenced by global economic interactions for much longer, but in the past those objectives and interactions functioned alongside a dominant locally-focused subsistence economy and associated relations (de Lame, 2005). Alongside this strategy, a policy of de-ethnicisation has been implemented to achieve reconciliation and eliminate ethnic tension, such that ethnic distinctions are eliminated from the activities and communication of formal institutions and their mention has been outlawed in all aspects of daily life.

The quote from one respondent in this study: *"The culture changed and because of the new vision of development it has to,"* reflects the changes in cultural practices by different groups which have occurred since post-genocide reconstruction. The new vision of development is, however, a centrally imposed discourse supported by numerous laws and rigorous enforcement of them and that change has therefore been imposed upon people. While this has served to erase some of the different cultural practices between groups, such as forest use by the Twa, this does not serve so quickly to erase the differences in the ways of thinking behind those cultural practices (a process more likely to take generations), nor their relative positions in society. But discourse has a considerable

influence on the perceived fairness and legitimacy of different environmental behaviours in rural Rwanda (Martin and Rutagarama, 2012) and changing perspectives of legitimate ways of acting may even serve to amplify the differences between groups, for example by criminalising the traditional practices of the Twa in the eyes not only of authorities but of other villagers.

The discourse and impact of the state's vision, so strongly tied to development has a great impact on the lives of Rwandans. This aspect echoes strongly of Foucault's descriptions of governmentality. The state's influence is great on the lives of rural inhabitants and this is likely to increase or to become more coercive as the government seeks to meet far-reaching targets such as villagisation of the entire rural population and land consolidation. The Rwandan state seeks to control how its subjects think and conduct themselves. This change is pursued through stringent laws, discourses and through the villagisation and land consolidation policies, even social and spatial engineering (Ansoms, 2009, Newbury, 2011),

State promoted changes have caused varied and contrasting effects on rural Rwandans. Results of this study show culture, agency, power and material outcomes to be interrelated and different social groups have been affected differently with poverty being reproduced or exacerbated for many, particularly the Twa. Dispositions may be both durable and transposable for groups with similar histories and practices (Gupta and Ferguson, 1992) and the ideology surrounding a modern Rwandan citizen is unable to erase that difference, which is still easily observable in every day village life. Differences in cultural practice and material wealth have been shown in other studies to enable some to adapt and conform to new ways of thinking as promoted in discourse and law, while others fail to be able to fulfil those expectations and reproduced outcomes of poverty and difference may persist (Cleaver, 2005). While many cultural practices have been prohibited in law, the alternative occupations, land uses or resources depend upon material wealth, education or skills. In general, though not without exception, those with greater wealth and power, whose culture may already have been more aligned with the envisioned transformation, are able to acculturate or adapt, whereas the cultural knowledge and practices of more unique or different groups is, forcefully and relatively quickly, eroded and subsumed.

The cultural erosion has progressed to such an extent and the ideology been so pervasively transmitted that even some of those who have suffered through the changes, while voicing regret at material and cultural loss, may still perceive those changes to be right, just or worthy. The opening quote to this section from one Twa respondent conveys the awareness of cultural difference, and of the suffering in having been forced to abandon that culture and become assimilated into a new one. Yet that individual also maintains "*but now we feel like it was the right thing to do."* While this sentiment was not echoed by all Twa, the perception that all were behind the redefinition of Rwandan citizenship may be indicative of the role of discursive power in creating governable subjects. However, the perceived role and thinking of the researcher also plays a part in the opinions expressed by participants and such opinions may also have been influenced by my own positionality and by the participants unwillingness to convey ideas of ethnic difference (for more detail on research approach see the introduction to this thesis).

The changes enacted in Rwanda affected people differentially based not only on their ethnic or cultural distinctions but also on their relative poverty. In the two rural areas in this study, returnees and wealthier long-term residents were more able to adapt their activities, utilising agency and representation to acculturate with the new discourse and legal framework defining Rwandan culture. However, the wellbeing and aspirations of many long-term residents, particularly those most dependent upon subsistence agriculture, and especially the Twa, with their unique culture in Rwanda, were far removed from the policy direction pursued and the projected image of Rwandanness. Their difference, through both poverty and aspects of their culture, was reinforced and the same behaviours, dispositions and outcomes are being reproduced. The effects of reconciliation and development policies have been criticised as being 'internally exclusive' (Purdekova, 2008), a conclusion supported by the data presented.

These generalisations across social and cultural groups do not apply to everyone and individual agency, even of the poor, may elevate a household to realise wellbeing outcomes which constitute a more meaningful life to them, and vice versa. Agency is dependent upon not only power relations and material wealth but also personal experience (Appadurai, 2004), and a number of individuals from the least relatively powerful positions, including Twa were able to act individually to secure wellbeing outcomes which went

against the common trends of agency and dispositions for those in similar groups.

There were strong differences between sites and within groups identified in this study, such that generalisations about ethnic groups are difficult to make. Some Twa had no connections to forest and did not aspire to any. Some long-term residents displayed greater forest connections than Twa and were considerably affected by conservation measures. The relative positions of power between the distinct socio-ethnic groups, were not consistent between sites. Although returnees were able to secure relatively higher socio-economic status and representation than residents at one site, the relatively powerful and materially endowed group at the second site were long-term residents who had benefitted from past development projects. And within each of those groups, there were also numerous households living in chronic poverty. Differences are not consistent between groups and areas and depend on local histories, experiences and particularly on interventions through national or international institutions. Who wins and who loses as a result is difficult to predict.

But, those in the lowest relative position of power have tended to see their difference highlighted and their marginalisation confirmed in each situation. At both sites the Twa occupied similarly subordinate positions in terms of their poverty, opportunity, representation and the coercion and discrimination to which they were subjected. Being unable to secure any forest rights or tenure over natural resources, but also unable to seek jobs or to manage land in the same way as other groups, the majority of Twa may be seen as existing between two worlds and within neither. Their own subjective meaning and cultural practices are rendered largely meaningless through conservation and trends in forest cover, and the relational obstacles they face, in terms of coercion, agenda-setting and discourse, result in their persistent poverty and inability to participate meaningfully alongside other Rwandans. Negative stereotyping, denial of rights and segregation are all features of Twa life (Kidd, 2008) and of the countries inhabited by Twa, Rwanda provides the least access to traditional forest land or compensatory support (Jackson and Payne, 2003). While they rightly perceive that they have been unjustly excluded from forests, that they have paid for the actions of others, their lack of representation and agency render their perceptions of justice largely irrelevant. This can be seen as a crucial time for not only their culture but their ability to survive.

The resulting inequality and persistent poverty, suggest that in order for meaningful poverty alleviation to occur for them, differences in relational and subjective wellbeing require recognition, which is arguably an important aspect of social justice (Fraser, 1995).

Forms of simple top down government leave marginalised groups more vulnerable to change and result in high levels of inequality and therefore it may be necessary to create space for negotiation for such groups. However the lack of civil society in Rwanda makes such political space uncommon (Beswick, 2010). Where differences between cultural minorities and members of a majority culture exist, uniform rights for all citizens will not result in just outcomes, but instead specific rights must be realised for minority cultures that protect their ability to survive (Kymlicka, 1991). The removal of ethnic identities in Rwanda has therefore been put forward as a democratic paradox as promotion of equality has led to the further marginalisation of the Twa as their specific needs and situation lose recognition and remain unrepresented (Beswick, 2010). This is not an uncommon struggle as the forced assimilation of groups into dominant cultures and lack of recognition afforded to less powerful groups have formed the basis of some of the most significant social movements in recent times (Williams, 1995, Fraser, 1995).

Subjective and relational differences between individuals and groups are often poorly represented in development policy design and this study attempted to apply methods to contribute a greater understanding of social and cultural aspects to the wellbeing of rural Rwandans. Fine-scale qualitative methods were utilised to consider differences in material, subjective and relational wellbeing between and within socio-cultural groups. The study of multidimensional wellbeing at this individual level requires concerted qualitative study and is likely to be poorly represented by objective indicators or questionnaires alone (Camfield et al., 2009). Inequality in power can be highlighted by objective indicators of what people can achieve in terms of their occupations or other wealth measurements. But the additional subjective data provides an understanding of how that is experienced, the processes involved, how it makes people feel and why certain dispositions may develop and endure. That additional perspective in this case reveals how and why poverty may be reproduced.

Approaches which aim to provide relatively holistic insights into people's lives may be best applied using multidisciplinary, inductive research which may utilise multiple concepts and even methods (White and Ellison, 2007). Studies which overlook the multiple components of subjective wellbeing and multiple scales at which relational wellbeing works risk an ideological bias in their findings (De Sardan, 2005). The concept of wellbeing used in this study was found to provide a suitable framework for holistic study, yet in applying it to the case study and explaining subjective and relational elements, it was necessary to draw on further existing theories. Bourdieu's theory of social practice (Bourdieu, 1977) and Lukes' broad concepts of power (Lukes, 2005) were found to be epistemologically and practically compatible for the study of social difference. Each of those concepts allowed sufficient scope for the consideration of individual agency alongside intersubjective elements and power relations on local, national and global scales.

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4. ASSESSING THE CONTRIBUTION OF ECOSYSTEM SERVICES TO HUMAN WELLBEING: BEYOND MONETARY VALUES

4.1 Abstract

Despite increasing theoretical interest, ecosystem services research has rarely utilised comprehensive definitions of wellbeing. This paper presents a framework incorporating one existing multidimensional definition of wellbeing alongside ecosystem services, and the framework is then applied to an empirical case study in Rwanda. The study explores the complex links between tropical ecosystems and human wellbeing in three study areas, which were all adjacent to native tropical forest, though one area had been rapidly deforested until recent years. The analysis provides several important insights for future ecosystem services research and for reconciling local needs with biodiversity conservation goals in Rwanda: Poverty is often considered a major cause of ecosystem degradation, yet while poverty did result in increased demand for specific natural resources, economic wealth was far from alone in determining ecosystem service use. Social, cultural and political factors played important roles. Cultural ecosystem services, which are often treated as distinct from provisioning and regulating services, were closely linked to land use and, importantly, were inseparable from provisioning and regulating services. Furthermore values relating to ecosystem services from intact tropical forest were few, with key provisioning services obtained from alternative habitats, meaning that landscape management could be highly compatible with biodiversity conservation in these rare and threatened habitats.

4.2 Introduction

Continued degradation to the world's ecosystems carries costs for human wellbeing, both locally and globally, through losses in biodiversity (Rands et al., 2010), financial costs (Perrings et al., 2010, Costanza et al., 1997), consequences for health and increased poverty (Boerner et al., 2007). There is therefore increasing interest in generating knowledge on the contribution made by ecosystems to human wellbeing, the costs which result from degradation of those ecosystems and in incorporating them into policy (MA, 2005). The relationships between ecosystems and human wellbeing, particularly tropical ecosystems, are extremely complex and, despite an increased theoretical focus, links made between them in practice have been weak (McAllister, 2005) and have lacked the necessary integration of natural and social sciences (Carpenter et al., 2009).

The ways in which tropical ecosystems contribute to human wellbeing are multiple and complex, including not only material dimensions but also social and cultural elements, comprising collective as well as individual subjective values. This complexity was recognised in the Millenium Ecosystem Assessment, in which document links between ecosystem services and wellbeing were explored and represented diagrammatically (MA, 2005). However, while illustrating the multidimensionality of the relationship, this did not represent a conceptual framework with which to operationalise practical research. Indeed since then, the few attempts made to link ecosystem services to wellbeing, defined beyond monetary indicators, have been conducted at scales too large to be useful for policy purposes (Duraiappah, 2011) or using previously collected data, which were not designed for the purpose (Wilkie et al., 2006, Grieg-Gran et al., 2005). Other studies have captured the material contribution of natural resources from individual habitats to households, revealing that environmental resources extracted from forests may represent the equivalent as much as 80% of household incomes, with that proportion tending to be higher for poorer households (Cavendish, 2000, Shackleton and Shackleton, 2006, Rijal et al., 2010), although absolute levels used may be higher for wealthier households (Coomes et al., 2004). Rather than extending such analyses to look beyond material values, a large proportion of ecosystem services research instead attempts to recognise the economic value of nature to global stakeholders, and assumes this will lead to improved wellbeing through increased investment in natural resource conservation

(Gómez-Baggethun et al., 2010, Norgaard, 2010). Due to the importance of context-specific human behaviour, understanding the links between ecosystems and human wellbeing requires fine-scale social understanding of local processes and interactions (Wollenberg and Springate-Baginski, 2009, Long and Ploeg, 1989) and research utilising a multidimensional definition of wellbeing which addresses local perspectives and social and cultural variation may therefore contribute to a greater understanding of these links (MA, 2005, Daw et al., 2011, Carpenter et al., 2009).

People's knowledge, experience, aspirations and ways of acting are varied, contrasting and are sometimes difficult to reconcile, which can result in tradeoffs between different users or stakeholders of that ecosystem (Rodriguez et al., 2006). The occurrence of tradeoffs reveals the role of power in the management of ecosystem services. It dictates who may control or benefit from them and which uses of them may be considered legitimate. The protectionist measures which have characterised nature conservation in developing countries and which have been influenced by the values of foreign actors and institutions have frequently caused negative consequences to local populations in developing countries (Miller et al., 2012). Research which may influence the management of tropical ecosystems therefore raises ethical questions, in that decisions influencing their distribution may affect the lives of large numbers of people, including a considerable proportion of poor people (Reyers et al., 2011, Chan et al., 2007, Jax et al., 2013). Research sensitive to local social and cultural contexts, perspectives and power relations is crucial in securing just outcomes for marginalised groups of people (Naidoo and Adamowicz, 2006, Sommerville et al., 2010). But approaches to research which merge fine-scale, detailed understanding of social systems with ecological knowledge do not only stand to benefit the world's poor. Efforts to conserve ecosystems may ultimately fail due to unforeseen social impacts, in spite of good ecological knowledge (Balmford and Cowling, 2006) and reconciling the needs of local populations with those of future generations and wider global goals of biodiversity conservation through the integration of social and environmental sciences has been put forward as a major challenge facing scientists and policy makers (Mascia et al., 2003).

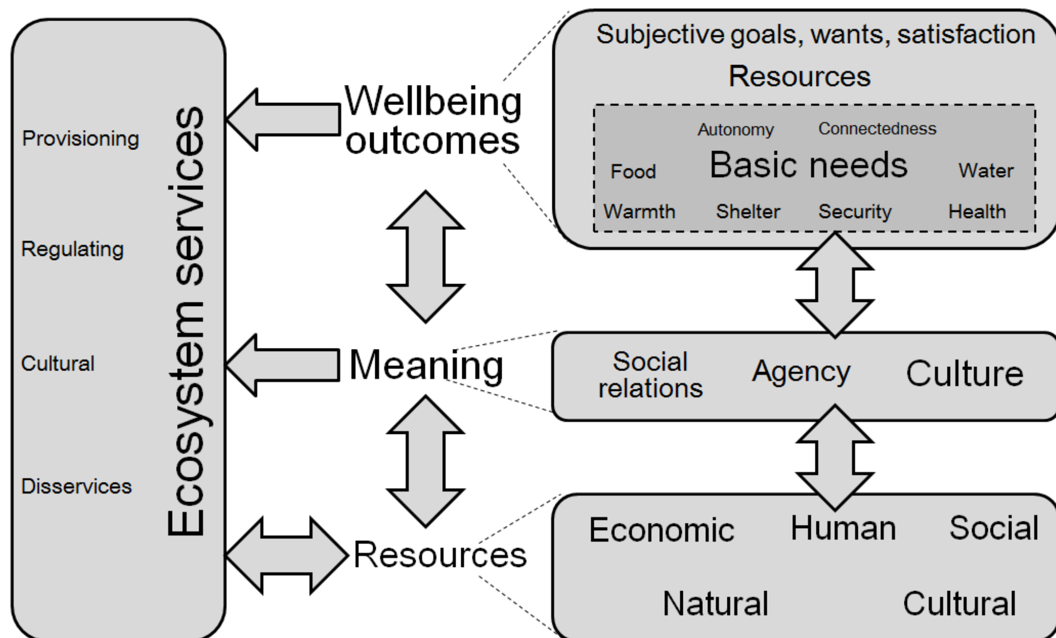
Ecosystem services can include easily observable provisioning services such as food and water to help people survive or products which provide the basis for livelihoods and around which significant friendships or

associations may be formed. Regulating services may influence local climatic conditions with benefits for farming or health. It is also important to recognise that ecosystem disservices exist in addition to ecosystem services (Zhang et al., 2007, Dunn, 2010) to the extent that the costs associated with living alongside a particular ecosystem may actually outweigh the benefits (Bush and Mwesigwa, 2007). And cultural services consisting of complex cultural connections such as spiritual attachment or traditional practices may be integral to social structures or to life satisfaction (Chan et al., 2012, Daniel et al., 2012). Rather than being a simple network of physical entities fulfilling functions, people perceive the environment as consisting of dynamic and connected places, each of which may have different meanings to different people based on personal or shared experience, knowledge and culture (Cheng et al., 2003). Approaches which focus only on single habitats or aggregate them and the services they provide may result in generalisations about resource use and the reasons for land cover change. Rural populations in developing countries do not simply see landscapes as consisting of agriculture and primary forest, but rather a diverse landscape with numerous habitats and places including wetlands, different types of forest, fallows, commons and varied agricultural land (de Groot et al., 2010). Although hundreds of millions of people living in poverty are concentrated around fragile ecosystems such as tropical forests and rural populations may depend on natural resources to meet their basic needs, to provide a safety net during times of scarce resources and to earn an income (Barrett, 2005, Coomes et al., 2011, Ravi and Bull, 2011), this correlation should not be interpreted to conclude that the poor are responsible for degradation of those scarce and natural habitats most valued for their biodiversity and represents an insufficiently detailed explanation not only because of the diversity of rural populations, but also because of the heterogeneity of tropical landscapes (Barbier, 2010). It is essential to consider multiple habitats beyond the core areas of biodiversity targeted by conservation programs and to differentiate between different uses and users across those habitats to describe the contribution of ecosystem services to wellbeing in adequate detail to find solutions to conservation and development issues (Termorshuizen and Opdam, 2009, McNeely and Scherr, 2005).

4.3 Methods

Research was conducted in western Rwanda, a region of high population, high poverty, yet diverse and threatened biodiversity. Using a detailed wellbeing framework integrated with ecosystem services theory (Figure 4.1), this study aims to use empirical findings to detail the multiple ways in which ecosystem services contribute to human wellbeing from the perspective of rural populations living alongside tropical forests. The first section describes the concepts included in the conceptual framework and linkages between them. Results of the case study are presented, through which local conceptions of wellbeing are described to show the ways in which ecosystem services contribute to local levels of wellbeing and to reveal the extent to which this relationship varies between sites and different groups identified. Finally, implications of our results are discussed for the practical application of ecosystem services theory.

Figure 4.1. A conceptual framework for multidimensional wellbeing and ecosystem services



4.3.1 Integrating ecosystem services and wellbeing concepts for practical research

Wellbeing must be conceptualised beyond simple economic indicators to understand values and behaviour (Sen, 1985, Easterlin, 2003, MA, 2005). Local populations tend to use a diversity of ways to articulate values

relating to natural resources, meaning adequate description of local values is often lacking in research and requires concerted qualitative study (Avci et al., 2010, Wilson and Howarth, 2002, Fairhead and Scoones, 2005). To disaggregate impacts on wellbeing, this study is guided by wellbeing frameworks (McGregor et al., 2009, White, 2009a), which recognise a diversity of resources and ways of acting to achieve wellbeing. These frameworks build on a number of previous approaches, notably Sen's (1999a) ideas about capabilities and functioning to conclude that "wellbeing arises from what a person has, what they can do and how they think and feel about what they both have and can do," (McGregor et al., 2007), and consists of material, subjective and relational dimensions (White, 2009b). The multiple types of resources, wellbeing outcomes and factors influencing meaning or values are shown in the conceptual framework (Figure 4.1).

Resources are described as "what a person has," in terms of five types of resource: natural, human, material, cultural and social, building on the capitals described in the sustainable livelihoods framework (Bebbington, 1999, Scoones, 1998). Wellbeing outcomes or "what they can do," is split between meeting basic needs and other wellbeing outcomes, being wants or goals. Resources are also included as well as further wellbeing outcomes as they are not simply a means to act to achieve something but may also be attained through these processes (Figure 4.1). The importance of the distinction between basic needs and other outcomes has been highlighted by numerous different authors seeking to theorise wellbeing (Sen, 1999a, Doyal and Gough, 1991, McGregor et al., 2007, Cruz et al., 2009) and also with ecosystem services research because resource use has often been divided between uses driven by subsistence needs and for meeting wants and goals (Coomes et al., 2011). Basic needs, a more objective element of wellbeing, are represented along the lines of Doyal and Gough's (1991) theory of human need, although slightly modified to represent the needs which are universally required for survival in the rural Rwandan context. In doing so education and safe working environment were excluded and physical and mental health were merged, so that eight basic needs are discussed here: the ability of people to 1) obtain food, 2) to find adequate water for washing and cooking, 3) to be physically and economically secure, 4) to have adequate shelter, 5) to be able to find warmth and fuel for cooking, 6) to be physically and mentally healthy and have the ability to find treatment for medical conditions (including

childbirth), 7) autonomy or freedom of action to the extent that an individual's actions are not so curtailed or coerced that they cannot meaningfully function, 8) to have meaningful relationships, connectedness or not to suffer from isolation or negative relationships. For any individual there are lower thresholds of each of these eight categories below which they could not meaningfully function or where serious harm of an objective kind will result (Doyal and Gough, 1991). However rather contradictorily, establishing indicators for these basic needs, particularly autonomy, connectedness and security, may rely upon subjective feelings and therefore best utilise qualitative techniques. In this study no evidence was found that autonomy, connectedness or security were so compromised that a person's basic needs for survival were not satisfied. Likewise water for drinking, washing and cooking was relatively abundant year round and no individual had to travel more than thirty minutes' walk to obtain clean water. However indicators were devised for the other four basic needs, detailed in section 1.5 of the introduction. Food scarcity was considered to occur when a household needed to go at least one day per month without a single meal. Basic need for shelter was considered not to be met for those living in very small, single room buildings with walls made of only earth and sticks, often housing large families and livestock. The basic need for health and health care was considered unmet if a household was entirely without medical insurance and unable to afford to seek assistance in the case of health issues. And the need for fuel and heating was considered not to be met if a household was unable to buy, find on their own land or be provided firewood by others and so relied on risky and uncertain illegal collection of firewood on a daily basis. These indicators are displayed in table 4.1, in section 4.4.2.

The wellbeing framework seeks not only to ascertain what people can do and be but adds "how they think and feel about what they both have and can do," a subjective element to wellbeing (McGregor et al., 2007) reflected by the meaning applied to resources and wellbeing outcomes as reflected in the conceptual framework (Figure 4.1). It is this additional subjectivity in wellbeing which further distinguishes the concept from measures of livelihoods (Camfield and Skevington, 2008). Recognising this individual variation in the way people attach meaning to goals and to resources is important because an individual's ideas of what constitutes wellbeing and how to achieve them are essentially the drivers of behaviour (Coulthard et

al., 2011). The meanings attributed to resources, and the establishment of wants and aspirations derive in part through individual agency.

Agency is the feeling of competence to act independently in pursuit of wellbeing (Alkire, 2005, Ryan and Deci, 2000). It is influenced by an individual's resources, which are enabling, providing capabilities and confidence to act. Agency is defined differently (although potentially correlated) to autonomy, which is considered as the freedom to choose and act as a person wishes in order to attain wellbeing. Autonomy links to institutions, norms and rules and represents the opportunity structures, enabling or preventing freedom of action (Sen, 1999b, Deci and Ryan, 1985).

Meanings or values are also constructed through relationships, groups and through culture by the social and political construction of norms. Within society, groups form systems of norms, values and practices, often relating to certain social, political or geographical settings and these cultures or identities, which operate at scales very different to national borders, influence the attachment of meaning to actions and objectives (Gupta and Ferguson, 1992). Cultural values and actions have also become influenced by global factors through greater interactions and transactions (De Haan and Zoomers, 2003) and this has had a historic influence on the conservation of biodiversity in developing countries. Culture is represented in the framework as both a resource, a reproduced way of acting to attain wellbeing outcomes, and also a factor influencing the social construction of meaning (Figure 4.1).

Ecosystem services constitute resources to people, directly as a natural resource but also interlinked with cultural, social, material and human resources. The ability to benefit from an ecosystem service may even be dependent on access to other resources such as knowledge, skills or tenure over a certain type of land and so resources also influence demand for ecosystem services (represented by two-directional arrow in Figure 4.1). The meaning attributed to resources as well as the wellbeing outcomes a household achieves also influence demand for specific ecosystem services, for example through cultural meaning or desire to meet a basic need (represented by the unidirectional arrows in Figure 4.1).

The importance afforded to social relations and culture in determining the values attributed to ecosystem services (as shown in Figure 4.1)

necessitates a consideration of relative power between users with different values and ways of acting. This influence of the relational alongside subjective and material dimensions of wellbeing is highly emphasized as part of the wellbeing definition adopted in this study (Deneulin, 2009). White (White, 2009b, 10) clarifies that "*the relational (dimension of wellbeing) concerns social interaction, the rules and practices that govern 'who gets what and why.' It involves power and identity, the connections between people and also the making of difference between them. It is the arena of action, which brings the material and subjective to life.*"

Issues of relative power, mediated by institutions at various scales, may play a critical role, affecting firstly which values are prioritised in decisions determining distribution and also in shaping the dominant discourses surrounding natural resource management. Power relations therefore shape the contribution of ecosystem services to an individual's wellbeing outcomes and must be considered as part of approaches seeking to meaningfully represent the links between ecosystem services and wellbeing.

4.3.2 Study site and research methods

Questions about wellbeing and ecosystem services are especially pertinent in the small land-locked state of Rwanda. Rwanda has the highest population density on mainland Africa and around 90% of its rapidly growing population depend on small-scale agriculture with few assets or livelihood options (UNDP, 2007). Erosion and resulting soil degradation are particularly widespread problems, causing difficulties in producing food from the scarce land holdings (UNEP and IISD, 2005) and pressure on natural resource allocation for the growing population has been so extreme that it has been put forward as an aggravating factor in previous conflict (André and Platteau, 1998, Percival and Homer-Dixon, 1996). However population growth and resulting land degradation may represent a simplified narrative which, when applied to policy strategies may overlook other pertinent trends in Rwanda (Roe, 1999)(section 5). Far-reaching rural development policies are being employed in Rwanda to deal with the problems detailed above. Policies include: universal education; health insurance; villagisation to enable provision of services; formal land registration; eradication of basic housing; and agricultural specialisation, whereby rural farmers are informed by local government which type of crop they are allowed to grow in each season (REMA, 2009). Policies are

designed and implemented in a very top-down manner in Rwanda and there have been few bottom-up studies revealing stories at the village level, with much work focusing instead on national scale development indicators (de Lame, 2005, Ingelaere, 2010). This research may therefore provide novel insights into the role natural resources play in the wellbeing of different types of household in rural Rwanda.

Three ethnic groups make up the current Rwandan population, which comprises a majority of Hutu, minority of Tutsi and less than 1% Twa. There were large-scale migrations of people after genocide in 1994 when large numbers of people returned from neighbouring countries, where they had resettled following persecution since the Hutu uprising in 1959. However, in Rwanda there are also strong regional identities based upon local historical and environmental factors and cultural values vary greatly within an ethnic group and overlap between them (Des Forges, 2005). The increased economic and social interaction occurring within processes of globalisation have further blurred the distinctions between ethnic groups, reinforcing the need to look beyond these commonly applied labels to pay attention to local context alongside wider influences (de Lame, 2005). Therefore reversion to the ethnic labels of Tutsi and Hutu is avoided and reference is instead made to the following three main socio-cultural groups observed in the three study sites based on a shared history, experience and currently quite distinct settlements: local Twa are an indigenous group who until recently led very different lives to other groups but have now been removed from the forests of the region to live in typical Rwandan settlements; returnees from the Kivu region of the Democratic Republic of Congo (DRC) who were resettled in the study sites after reentering Rwanda and being homed in camps during the 1994 genocide and continuing conflict; the majority of the population are considered to commonly be long-term residents of the mountainous regions of western Rwanda.

Research took place from October 2011 to May 2012, under permit from the Rwanda Development Board, at eight villages across three sites: four villages in two sites bordering Nyungwe National Park (Nyungwe NP) in southwest Rwanda and four villages at one site bordering Gishwati Forest in the northwest. The reasons for site selection and differences between the eight villages are described in the introduction, section 1.5. Nyungwe NP and Gishwati Forest are both montane rainforests lying on the Congo-Nile divide, reaching up to 3,000m altitude. Both forests contain high levels

of biodiversity including numerous species endemic to the Albertine Rift, but are also surrounded by dense populations, with an estimated half a million people bordering the larger Nyungwe NP, and communities often very isolated from population centres and infrastructure (Plumptre et al., 2007). The three research sites were selected based on their relative levels of infrastructure, access to transport, trade links and employment opportunities, ranging from a very remote site with no paved road or public transport to a site alongside a main highway to the capital Kigali and hosting a national park headquarters (Figure 4.2). The names of the eight villages within those three study sites in which research took place have been anonymised and labelled A to H. A and B are in Nyamsheke District in the southwest of Rwanda, C and D in Nyamagabe District to the east. Villages A to D all lie alongside Nyungwe NP. Villages E to H are all in Rutsiro District in northwest Rwanda and lie alongside Gishwati Forest (Figure 4.2).Natural forests have diminished considerably in size since the 1970s. Nyungwe received greater protection in the 1990s, became a National Park in 2003 and its size has remained relatively stable since at approximately 1,000km^2. Gishwati in comparison was cleared for cattle ranching projects, pine plantations and military zones in the 1980s and was further converted to cropland and human settlement for returnees from DRC after the genocide in the mid 1990s, (Plumptre et al., 2001), leaving a patch of degraded forest only 6km^2 in size in 2002, which has been strictly protected since 2008.

Figure 4.2a. Satellite map of the least remote site in Nyamasheke District including villages A and B. Native forest, tea plantation, plantation forest and wetland labelled. The paved road is on the left side of the map. Image taken from Google Earth (2006).

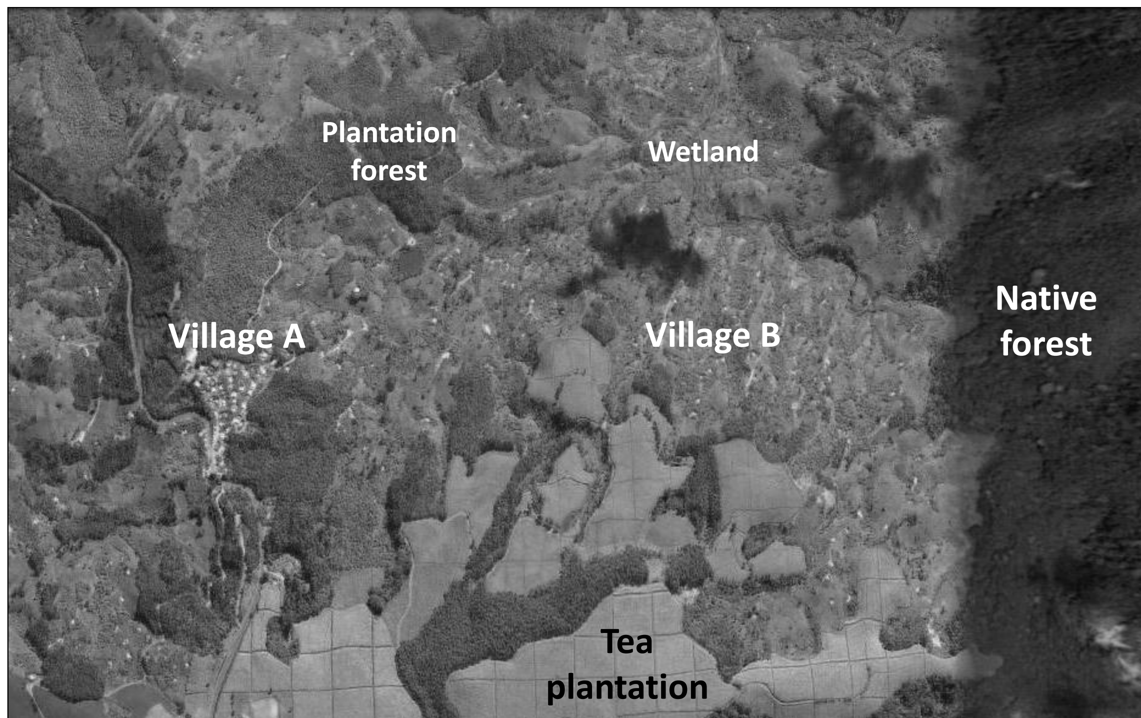
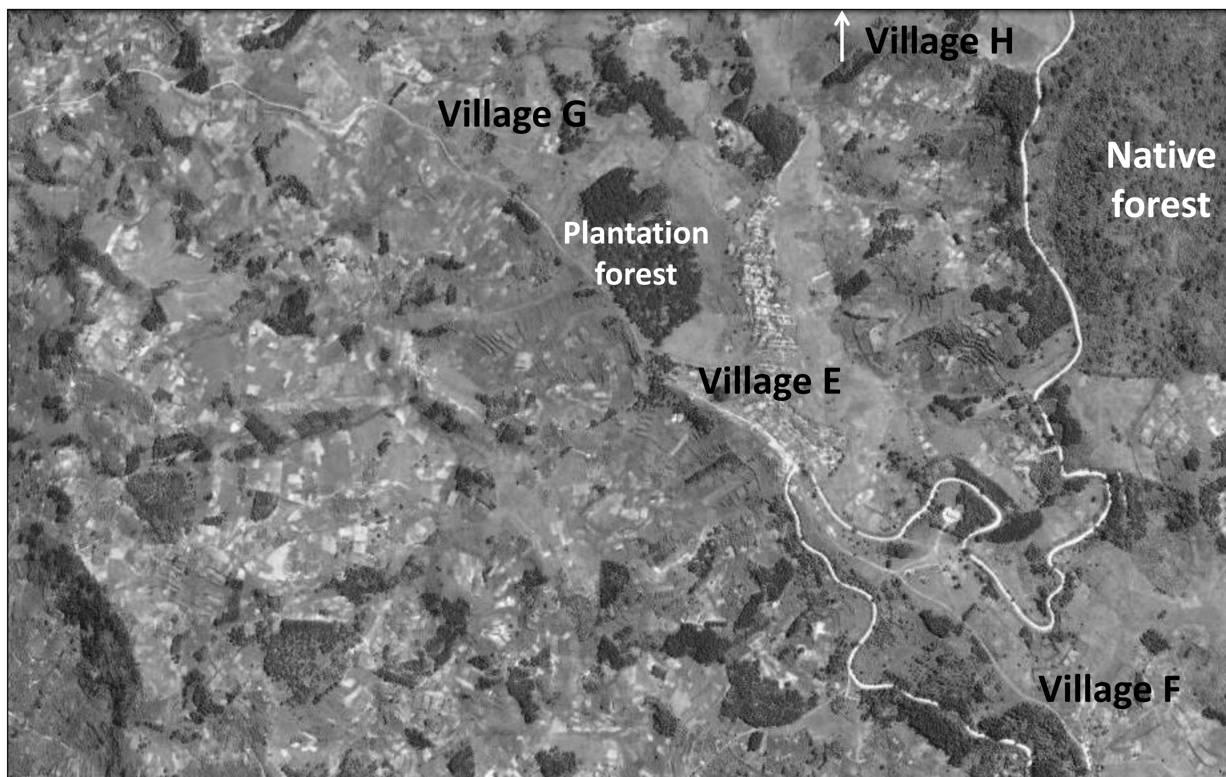


Figure 4.2b. Satellite map of the site in Rutsiro District with medium levels of remoteness and including villages E, F, G and H. Native forest (Gishwati), plantation forest and village locations are displayed. The unpaved road runs alongside the native forest in the right of the picture. Heterogeneity in the landscape is notable in both areas with areas of private forest, pasture and different degrees of cultivation visible. Image taken from Google Earth (2006).



Respondents for semi-structured interviews were selected at random and focus group respondents in turn selected randomly from this subset of households. One focus group was conducted in each village and interviews were completed with between 15 and 20% of households, giving a total of 165 interviews. Interviews were semi-structured to enable the conversation to concentrate on areas of wellbeing perceived as important to the respondent, took place with either adult male or female from each household and lasted between 1.5 and 4 hours. Focus groups and interviews were all conducted in Kinyarwandan, the first language of all respondents. Ecological variables were not specifically measured but instead people's perceptions of ecosystem services were investigated.

To investigate the different types of ecosystem services and disservices participants were initially asked open questions about the ways in which they benefit from different habitats in the landscape, which resources are and were collected from those habitats and any perceived negative impacts of living alongside those habitats. Then the ways in which those services and disservices impact wellbeing and also how and why that has changed in the past ten to fifteen years was explored in more detail to attribute reasons to changes in ecosystem service provision and demand. Hence respondents were not prompted by the initial mention of specific ecosystem services but rather attention was paid to their own individual or collectively formed perceptions. The services of climate regulation and tourism presented in Table 4.1 were determined through such open questioning. Where certain ecosystem services or disservices had not been mentioned, questions were often latterly posed about their perceived importance, such as "Do erosion or flooding every cause problems in this area or to you and if so how?", followed by "Do any types of vegetation or parts of the landscape make that worse or help to prevent flooding or erosion and can you describe how?" This enabled us to revisit certain ecosystem services and ensure key areas had not been overlooked through open questioning and also to corroborate answers. For example, as discussed in results, few people appeared to consider tropical forests to have a particular value in preventing erosion or flooding and this was confirmed by secondary, more specific questioning regarding the issue.

Cultural links were investigated through a broader questioning of the meaning of culture, the importance of places, of traditions, information and stories passed on, of specific items and materials which people currently

use or did in the past. Common practices regarding land use and the motivations for and knowledge involved in doing so were also explored. Some specific examples of questions employed in interviews to investigate culture are presented in section 1.5 in the introduction to this thesis.

To verify information about natural resource use, observations were made by walking through varied habitats with key informants and talking informally to locals, outside of organised semi-structured interviews. This information was supplemented with existing datasets collected by forest rangers specifically about illegal forest use.

To enable analysis of differences between households distinctions were made between villages and sites, ethnic origins and socio-economic status based on the various occupations of the household. 25 different income streams were identified, with households often engaging in several simultaneously, and these were broken down into four main categories: agricultural labourers who irregularly earn approximately £0.50 per day (17%), those engaging in other labour or small trades such as tea picking, building or selling milk (25%), households with more control over their own livelihoods such as crop traders, moped drivers or shop owners (36%) and finally professionals or tradesman such as teachers, administrators, builders or mechanics (22%). In this final category households with a highly diversified income consisting of three or more income streams from the penultimate category were included.

4.4 Results

4.4.1 Local conceptions of wellbeing

Focus groups revealed very consistent ideas between all eight villages about what a household needs to live well. When asked “what is important to be able to live well in this village?” and with discussion encouraged until no new answers were obtained, the following responses were agreed as being important in six or more of the eight focus groups conducted:

1) Land and livestock were the primary concerns of people in all eight villages to produce food to satisfy basic needs and to grow crops to secure a livelihood and a regular income.

2) Access to some type of work, the ability to exploit different income streams among the diverse rural economy was considered important.

3) Good health to be able to act effectively to produce food and to earn an income.

4) Having adequate shelter for the family (many houses were very basic constructions and small spaces for accommodating a large family).

5) Social relations and sharing within rural communities.

6) The freedom for people to be able to make their own decisions about how to act to achieve wellbeing, rather than being constrained by centrally designed rules.

7) Infrastructure, particularly paved roads and transport networks were linked to opportunities for both trade and work.

Key elements of wellbeing are therefore not limited to material aspects, but also include social relations, cultural and political aspects, supporting the idea that a multidimensional definition of wellbeing is necessary to comprehend people’s motivations and behaviour. The absence of education in this list is surprising. However while put forward by some focus group participants, the importance of education appeared greater among wealthier villagers and its inclusion as an important component of wellbeing did not receive consensus. Universal education has only been introduced very recently in Rwanda and although education levels are rising rapidly and are notably higher for children than for adults, for many the benefits have not yet been realised. Education levels were very low for adults with

only 16% of household heads having finished primary school, explaining why the perceived contribution of education to wellbeing was inconsistent and contested, particularly by relatively poor participants.

4.4.2 Provisioning Services

4.4.2.1 Provisioning services and basic needs

The level of wellbeing within the three study sites was such that provisioning ecosystem services played a considerable role in the meeting of basic needs for many households. The provisioning services which people sought in the largest quantities included: food production from subsistence agriculture; firewood for fuel; grasses for livestock (to produce milk or manure to aid food production); wood, earth and rope for shelter; and medicinal plants for health. Water was abundant year-round in each of the study sites and in the absence of scarcity or quality issues, it was not considered as a priority for wellbeing.

Access to provisioning services towards meeting basic needs was influenced by wealth and particularly by land ownership, illustrated by the fact that 77% of households able to grow enough crops to trade and 93% of those able to produce their own firewood had land holdings greater than the median plot size of 0.4 hectares. Land holdings varied considerably between households, but were generally very small at all sites. The mean holding, including rented or shared land through informal tenure regimes, was 0.81 hectares (Table 4.1) and eight per cent of households had absolutely no land.

Respondents felt that without the paired resources of land to grow on and livestock to provide manure to manage that land, a household would likely suffer food scarcity, because in the absence of employment opportunities few could afford the alternative of buying sufficient food from markets. Due to forest protection, hunting and gathering was very rarely employed in these areas as an alternative. 39% of households had to go without any food on at least one day per month, including 89% of households reliant on subsistence farming and agricultural labour, who had average land holdings of only 0.15 hectares (Table 4.1) and suffered food scarcity frequently and also seasonally.

Table 4.1. Basic needs, ecosystem services and socio-economic indicators across socio-economic, ethnic groups and study site.

	Socio-economic groups				Socio-ethnic groups			Geographic locations			Average (range by village) (n=165)
	Farm labourers (n=27)	Mixed labour (n=42)	Employed or self employed (n=60)	Professional or diversified (n=36)	Long term residents (n=120)	Returnees from DRC (n=28)	Twa (n=17)	Connected to markets with employment (n=50)	Remote, some infrastructure (n=75)	Very remote, lack of infrastructure (n=40)	
Average land size in hectares (standard error)	0.15 (0.03)	0.20 (0.03)	0.87 (0.08)	1.92 (0.35)	0.68 (0.09)	1.73 (0.36)	0.22 (0.06)	0.61 (0.12)	0.74 (0.11)	1.20 (0.30)	0.81 (0.3-1.8)
Food scarcity at least a day per month*	89%	45%	32%	8%	28%	54%	94%	32%	37%	53%	39% (10-87%)
Collect firewood illegally*	100%	74%	57%	25%	58%	54%	100%	50%	57%	83%	61% (30-93%)
Without health insurance*	48%	57%	34%	19%	43%	25%	29%	34%	48%	28%	39% (20-75%)
Very basic shelter of earth and sticks*	52%	45%	12%	6%	25%	21%	59%	42%	15%	35%	25% (5-50%)
Own one or more cows	0%	17%	55%	53%	35%	54%	6%	26%	41%	38%	36% (7-55%)
Perceive benefit from climate regulation*	85%	71%	85%	83%	77%	93%	94%	60%	89%	93%	81% (53-100%)
Perceive benefit from tourism*	22%	29%	30%	39%	23%	43%	59%	36%	43%	0%	30% (0-67%)
Female headed households as % of group	26%	29%	20%	5%	16%	32%	29%	22%	23%	13%	20% (10-35%)
Polygamous households	11%	14%	7%	8%	7%	18%	12%	2%	15%	10%	10% (0-20%)

* See methods section 4.3 for more detail on how these variables were derived.

The majority of households were unable to produce firewood or building materials to meet their own needs. Only 18% of households were able to acquire it from their own land, so the majority of households collected firewood in government owned or private forests of non-native trees. 100% of labourers collected firewood as opposed to 25% of those with diversified incomes (Table 4.1). Legal access to materials for house-building was similarly dependent on wealth and land ownership. It has been prohibited to build rooves from grasses in Rwanda, so access to this ecosystem service has been removed and people have no choice but to find money to buy tiles or zinc sheets. Those with sufficient money could buy manufactured tiles, bricks and concrete manufactured outside of the local area. But as land holdings were too small for the vast majority to find timber for building, clay earth to build blocks with or even materials to make ropes made from vines and bark, those who could not borrow or afford to buy enough materials collected at least some of them, usually illegally, in order to be able to construct a home. Access to rope and clay-rich earth depended particularly on wetlands and valleys and building timber came from private forests and protected forest buffer zones, only very occasionally impacting on native forest.

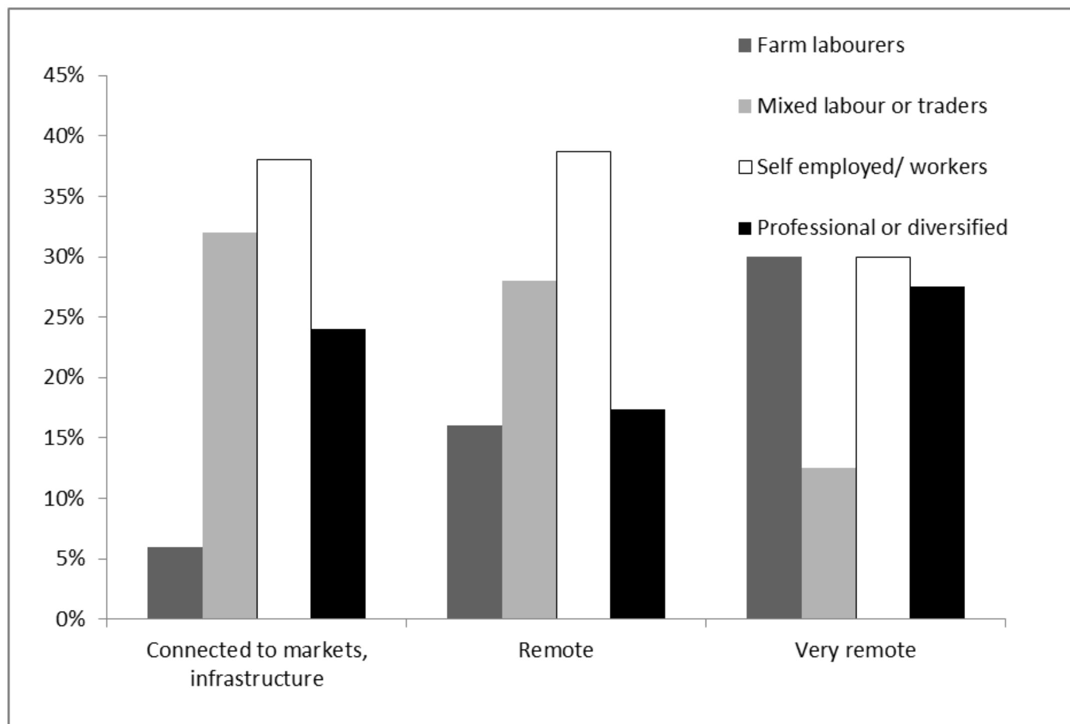
Although people perceived value in buying health insurance and utilising the improved health provision and more accessible rural health centres, affording it was very difficult. The poorest households therefore relied on donations to help them acquire modern medicines (16% were paid for through the government) or otherwise collected or bought traditional medicines. 39% of households interviewed had no medical insurance and were unlikely to be able to afford the costs of medical treatment.

Many of those households reliant on basic labouring income were unable to acquire sufficient resources and money to meet not just one, but multiple basic needs. Land and livestock holdings were negligible for this group, 100% of them collected firewood illegally, 89% suffered food scarcity, 48% had no medical insurance (another 41% are reliant on the government to pay for them) and 52% had very small and basic one-room shelters made only from earth and sticks (Table 4.1). 22 households (13%) failed to meet any of these four basic needs themselves and therefore poorer households were more likely to seek natural resources illegally from surrounding habitats. Female headed households were slightly skewed towards lower occupation categories (Table 4.1) and accounted for eight of the 22 poorest

households, suggesting that these households may be slightly more dependent upon ecosystem services to meet basic needs. Although agency differs by individual, people from households in this position often felt comparatively low levels of agency, which impacted what they felt able to do with the resources they had. This was ascertained by asking open questions about people's aspirations and concerns, how they had changed and how able the participant felt to achieve their aspirations, short term goals or to overcome certain difficulties. However people's feelings of competence to be able to act to achieve certain aims was also explored regarding many different domains of life discussed, including occupations and farming, relationships, housing etc. People from these households identified as struggling to meet basic needs felt unable to plan or develop aspirations, and being largely occupied with finding enough food on a daily basis could not borrow or invest in livestock, and often mentioned finding it difficult to visit others because of their lack of food or drink to share.

The availability of employment, infrastructure and access to markets to sell agricultural produce played a role in the ability to meet basic needs and also affected demand for ecosystem services. In the study site with infrastructure, connections to markets and also some tourism, very few households relied on agricultural labouring alone (Figure 4.3). Instead many could sell edible crops, cash crops such as tea, timber or charcoal to end consumers in Kigali, or work in shops, tea plantations, in construction or as moped taxi drivers. In the more remote areas there appeared to be a greater dichotomy between poor agricultural labourers and those in higher income occupations (Figure 4.3) which contributed to the higher proportion of households collecting firewood and suffering food scarcity (Table 4.1). Livestock ownership was also lower (Table 4.1), resulting in lower demand for animal fodder and bedding.

Figure 4.3. Proportion of households across occupation categories for each of three sites.



4.4.2.2 Provisioning services and material wellbeing

Demand for some provisioning services increased with wealth. Collecting fodder and bedding for livestock is a provisioning service carried out primarily by the wealthiest households. Livestock is important for people to possess alongside land, to enable them to farm in traditional ways despite losses in soil fertility and is also valued as an investment, which can be sold to meet significant costs such as education, rather than for meat production. As open grazing of livestock on public land was forbidden in Rwanda and cattle must be kept inside sheds, demand for fodder and bedding has greatly increased. This demand comes primarily from the relatively wealthy minority (36% of our sample, Table 4.1) who own cows, although a further 14% of households borrowed cows from wealthier owners to care for them in return for a share of the sale profit. Gathering centred on private forests, protected forest buffer zones and wetlands, though also encroached on native forest. The extent of this resource use was quite comparable to the daily collection of firewood by the least wealthy households.

Prior to protection, Rwanda's tropical forests provided a large number of provisioning ecosystem services to the surrounding populations, including timber products, fruits, grazing and medicines (Hill et al., 2002). However, under the current regime of strict forest protection, the goods which households required to meet basic needs were mostly acquired from habitats outside of the tropical rainforest, for example all firewood collected and building timber observed consisted of non-native tree species or those common in private plantations or agricultural habitat. In the face of intensification of areas like wetlands which once acted as common land (Nabahungu and Visser, 2011), these goods were often acquired at the risk of a fine or a physical beating.

The provisioning services sought from protected natural forests were related to livelihood opportunities and not necessarily linked to basic needs. When asked what previously available goods were missed from the now protected forest, meat, honey and gold, all of which were primarily sold for income, featured far more strongly among respondents' answers than any materials to create everyday products or to directly meet basic needs. Mining for gold and other minerals was still frequently recorded in Nyungwe NP by forest rangers and 40% of incidents in 2011 occurred in the vicinity of one of our study sites, representing approximately 78 mines at that site in one year alone (Rwanda Development Board, unpublished data). Mining activity was concentrated in the site with the greatest opportunities for employment and trading. Although this was primarily due to geological factors, it suggests that greater off-farm employment may not be effective in reducing livelihood activities with high potential earnings such as mining. Although none of our respondents openly admitted to mining, our own observations in that study area revealed mining to be very widespread around the forest edge and this activity did involve some of the wealthiest respondents in the sample.

Although no evidence of hunting was recorded among respondents, it was prevalent in Nyungwe NP (Rwanda Development Board, unpublished data) and also occurred in Gishwati Forest (Nyandwi, 2008). In 2011, over 4,000 snares were found in Nyungwe NP by the limited number of rangers searching for them (Rwanda Development Board, unpublished data). However, this provisioning service was considered to be carried out by specific individuals who may travel long distances and sell meat for their

livelihood rather than being a common activity for subsistence use among villagers (Mulindahabi and Ndikubwimana, 2010).

Forest protection and associated tourism may generate benefits for local populations, yet these were quite limited to wealthier households in central locations. A limited number of jobs were available in hotels and associated services or with public sector and non-governmental organisations responsible for forest management and tourism. Additionally a revenue sharing scheme was in operation to distribute 5% of tourism revenue to local communities and non-governmental organisations distributed benefits to households in the form of water supply, education facilities, farming inputs and jobs. Yet benefits were very geographically skewed towards the two sites with tourism centres and were concentrated in specific villages within these sites where up to 67% of households perceived benefit (Table 4.1). In the two villages in the most remote area, furthest from National Park headquarters, not a single household perceived any benefit (Table 4.1). Furthermore households which did perceive a benefit from conservation organisations, tourism or jobs were more likely to be in the higher occupation categories, suggesting a form of elite capture of conservation benefits (Table 4.1).

In contrast, many respondents perceived costs of living adjacent to natural forests, primarily relating to crop raiding animals. In some instances, particularly where people lived immediately adjacent to forest areas, crop raiding prevented people from growing certain types of crops, encouraging them to abandon traditional polyculture and grow crops such as potatoes (which may be avoided season upon season due to their heavy toll on soil fertility) or alternatively influenced decisions to convert to alternative land uses such as pasture or to sell land altogether. Crop raiding had influenced the land use decisions of one third of the 21% of households who possessed land less than 0.5km from native forest habitats.

4.4.2.3 Impact of social relations on provisioning services

Social relations had a direct impact upon the need for households to exploit provisioning ecosystem services. Social protection and the ability of the poor to access social resources to meet basic needs is a very important aspect of rural Rwanda and plays a big part in social mobility and wellbeing (de Lame, 2005). Sharing with those in need was put forward by a majority of respondents as the main element of Rwandan culture, and (to connect

with the conceptual framework in figure 4.1) represents a commonly held value which influences the meaning of resources and influences individual agency. This cooperation meant that resources tended to flow towards some of the poorest in the community, who otherwise struggle to meet basic needs. The indicators used to represent basic needs in this study are described in detail in the introduction, section 1.5 and in the methods section 4.3 of this paper. 22 households (13% of the sample) suffered food scarcity, were without medical insurance and therefore unlikely to be able to seek assistance in the event of illness and were also reliant on the illegal collection of firewood for fuel for heating and cooking. However of those 22 households, 19 received some help from others to try to help them to meet them, in terms of food donation, firewood or money. This common practice of sharing represents an important safety net which may have mediated dependence on natural resources. Overall, 18% of the 165 households in the sample had received money from friends or relatives, 19% received food from their friends or neighbours and 19% borrowed livestock.

In contrast, social relations may also exert a negative influence on wellbeing, agency and influence access to ecosystem services. This occurred most frequently due to the breakdown of polygamous relationships (involving 10% of households on average but more in the remote sites (Table 4.1)) resulting in very difficult circumstances for a wife as the husband assumed control of their resources, sometimes selling land or livestock to support many children, creating ill-feeling and uncertainty as they sought rights to resources. These women described a particular lack of agency in being able to assert their rights to contested plots and emerge successfully from lengthy processes involving local authorities, representing a perceived inability to benefit from institutions in the same way that others may.

4.4.3 Cultural Services

When asked about the significance of culture in people's everyday lives, the overwhelming response was that sharing with others was central to Rwandan culture. Forest products, traditions and types of worship were considered to play little direct role. However, cultural services were still evident and were interlinked with provisioning services. Systems of sharing and interacting were closely related to land uses, which themselves had developed in response to the climatic and environmental constraints faced by the population. Cultural ecosystem services identified in our study

related specifically to knowledge systems, values and practices which varied between groups with the cultural meanings given to different natural resource uses. The cultural ecosystem services identified therefore had little to do with worship, recreation, aesthetics or inspiration among local people.

The common type of farming practised in each of the study sites and beyond is a complex and dynamic polyculture with a multitude of different crops with different tolerances and timings often grown on numerous plots in a variety of habitats. These systems of land management are intertwined with the culture of people inhabiting this mountainous landscape and have developed to minimise the risk of having nothing to eat, as a response to extreme topography and climate which frequently and unpredictably constrain food production (Pottier and Nkundabashaka, 1992). Despite the small size of plots, land was considered central to a household's wellbeing and the majority prioritised growing multiple crops despite loss of soil fertility, crop diseases, difficulties in feeding livestock and government rules for agricultural specialisation. This represented a particular cultural meaning which was conveyed to land, livestock, agricultural inputs and associated human and natural resources, one which varied between social groups to reveal differences in cultural resources based upon regional attachment and history. Many of the returnees from DRC left Rwanda in the 1960s or were born in DRC, where land was far more abundant, soil more fertile and climate less extreme. They were placed in communities in Rwanda in the mid-1990s rather than making their own choice of where to settle. Despite the fact that they were provided with disproportionately large areas of land, often taken from long-term residents without compensation (Bruce, 2007), and were on the whole able to achieve higher income-earning occupations than other groups (Figure 4.4), many were unable to adapt to the land they were provided with. Hundreds left the two villages among the eight in this study where they had been placed, in many cases preferred to return to refugee camps or sought areas with land more suited to their knowledge and experience. Those who remained, in the face of deteriorating soil, converted their land to pasture or trees far more readily than residents, who tended to persist with polyculture where possible. Of the 28 households of returnees, 21 changed from growing crops to trade milk, grow trees or tea.

Figure 4.4. Proportion of households of each socio-ethnic group displayed by occupation categories.

The culture for local Twa had only begun to change quite recently due to their removal from the forest and strict conservation of it. For them, finding work was put forward in focus groups as the most important resource for wellbeing rather than land. Twa made little progress in turning to agriculture for their livelihoods and instead most became dependent on labouring opportunities (Figure 4.4) and were willing to migrate to different areas to find it. Not one Twa household could be classified as professional or as having diversified income-generating activities and 94% of Twa respondents suffered food scarcity (Table 4.1), revealing some of the relative difficulties faced. Those who received plots from the government in the past readily sold their land soon after, even though they possessed many of the human resources required to manage that land. From interviews, cultural links to the now protected, native forest were far more evident in their knowledge and their wants than for the other two groups and they talked at length about the significance of forest goods to their wellbeing, including different sources of food and materials such as rope to sell to others. Indeed their removal from the forests, subsequent denial of access to forest products and their inclusion in laws restricting ethnic references has attracted criticism from human rights groups as cultural assimilation (Beswick, 2011, Lewis, 2000, Huggins, 2010). The wellbeing of these different groups, and their use of ecosystem services, is influenced by the relative power between them and with other institutions, historically and presently. This relational aspect to wellbeing is essential to consider in

assessing wellbeing and therefore the contribution of ecosystem services to it. For example the ability of the Twa to succeed in finding alternative livelihoods to forest use had been considerably hindered by both lack of training and also exploitation. Instances of failed cooperatives due to corrupt leadership, misappropriation of wages, and reallocation of donations by others were common in their experiences since forest protection.

4.4.4 Regulating Services

Only a single regulating service was widely perceived to be of benefit to households bordering both forests: 81% of all households regarded the influence of forests on climate as beneficial for agriculture (through rainfall and frosts creating soil moisture), and also for health (the cold creating unfavourable conditions for malarial mosquitos). The values placed on climate regulation are some of the key factors explaining the presence of dense human populations at the forest edge in mountainous areas in Rwanda (Roose and Ndayizigiye, 1997, Van Hoyweghen, 1999). In fact this single ecosystem service and fear of disrupting the relevant ecological processes was the major reason that many people supported forest protection despite the loss of ecosystem services supporting local livelihoods due to strict conservation. This supports the importance afforded to this regulating service in the Millenium Ecosystem Assessment (MA, 2005). Fewer households (still 60%) perceived a benefit of climate regulation in the study site with greater infrastructure than the more remote sites where the meeting of basic needs and livelihoods were more intimately linked to cultivation (89% and 93%).

Unexpectedly, not a single household felt that the forests provided any benefit in terms of erosion regulation, soil fertility or water provision. People felt that these functions were just as easily performed by non-forested habitats and there were few differences in perceived ecosystem services provided by relatively intact and severely degraded forest. Although Gishwati Forest had been heavily degraded up until recent years and there had been problems with erosion and flooding at that time (ROR, 2004a), there was no difference in the regulating services perceived by respondents living near Gishwati and those adjacent to the relatively intact Nyungwe NP. Shortly after large areas of Gishwati were deforested, erosion problems and flooding were suffered briefly in some areas. But inhabitants felt that water regulation, soil retention and climate regulation were quickly

alleviated by regrowth of vegetation over a short period rather than requiring reforestation to perform that ecosystem service. Around Nyungwe NP many pointed to the fact that they live on deforested slopes without any forest on their peaks, yet have no problems of water provision and may use alternative means to stabilise their soil.

4.4.5 Influence of politics and autonomy on ecosystem services

Through the analysis so far the main elements of wellbeing put forward by focus group respondents have been discussed, except for one: autonomy or the freedom of a household to make its own decisions was highlighted as one of the key factors in a household's ability to live well. In addition to the relatively recent prohibition of forest use, Rwandan agricultural policies had a strong influence on the ability of people to manage land and utilise their experience and cultural resources. Agricultural and rural development policies, which intended to address problems of land scarcity and reduced fertility, affected tenure over agricultural land and the ecosystem services which it may provide, including not only food production but also the cultural elements of ecosystem services and single regulating service which were identified above. The Rwandan government, supported by international donors, implemented a National Land Policy in 2004 stipulating that land can only be held on a leasehold basis and that the government may choose to reallocate it if not used effectively (ROR, 2004b). The Crop Intensification Program has since attempted to control production of crops and to increase national food security by setting strict production targets of limited types of crops for each region of the country and by making subsidised seeds and chemical fertilisers available (MINAGRI, 2008). This policy began to influence rural areas in our study from around 2010, such that from this time the government specified what each Rwandan could grow in which season. However, the ability of households to benefit from these policies is limited by their land holdings and ability to participate in credit schemes for fertiliser to accompany the approved seeds. Only 37% of households in this study actually receive any income from crop trade, and without any expected income to pay back credit, these households were very unlikely to use the subsidised inputs and only 32% of households did so (for more detail see section 5). But while a minority of wealthy farmers may benefit from the changes, the majority of smallholders have been affected negatively, through their resources, what they feel they are able to achieve with them and their outcomes (section 5). The policy also affects labourers

because planting and harvesting are more coordinated and work opportunities more concentrated than when multicropping with staggered planting times and overlapping crop cycles was the norm (Cantore, 2011). While freedoms were not so restricted that it constituted failure to meet a basic need itself, government policies were perceived as having strong effects on the ability of households to meet other basic needs, primarily to feed a family and this affected not only what people were able to do with their resources but most often negatively affected how they felt about what they had and could do. While there was an obvious reluctance among respondents to voice negative opinions about government policies and at no time were questions asked to prompt negative responses, 68 respondents raised concerns about the impacts of agricultural policy on their farming (six gave positive opinions).

4.5 Discussion

People place importance on ecosystem services beyond their material value and this is illustrated in the case study presented for rural Rwanda. Studies using monetary proxies to represent the values applied to ecosystem services such as contribution to income, cost-benefit or contingent valuation may overlook the importance of a variety of non-material benefits or the crucial contribution ecosystem services make to meeting basic human needs (Pagiola et al., 2002, Kroeger and Casey, 2007). In order for the ecosystem services approach to provide new understanding relevant to the long-term management of landscapes threatened with complex tradeoffs, links to wellbeing must be expressed beyond material means. However surprisingly few empirical studies have been conducted on the contribution of ecosystem services to human wellbeing, particularly at the household level (Wilkie et al., 2006, Grieg-Gran et al., 2005). This study integrated concepts of multidimensional wellbeing (Gough and McGregor, 2007) and ecosystem services, advancing the outline put forward in the Millenium Ecosystem Assessment (MA, 2005) to present a conceptual framework which was then used to conduct a locally-grounded, fine-scale case study of the contribution of ecosystem services to human wellbeing. The application of the framework contributes to the practical research of human-environment interactions beyond simply monetary valuation. Additionally, even given the limited scope of this study, the insights provided into complex relationships provides locally relevant insights for both development and sustainable

management of the landscape through data which are rarely available to environmental managers and policy makers.

In rural Rwanda the contribution of ecosystem services to wellbeing was, in the case of several services, related to the material factors of land holdings and income diversification. Those dependent only on labouring opportunities and with little land were less likely (but not in every case) to be able to produce or afford sufficient food for the household, less likely to be able to afford health insurance (and therefore have need to collect traditional medicines), and more likely to depend upon surrounding habitats for firewood and some construction materials. Poverty (or as it is defined in this framework: the inability to meet basic needs) is just one of a wide variety of factors which combine to influence values relating to and use of natural resources (Lambin et al., 2001). Where people struggle to meet multiple basic needs and few alternatives exist beyond natural resources, demand will undoubtedly arise for provisioning ecosystem services to meet certain basic needs. However this link is often used to assume that poverty is the major cause of ecosystem degradation. Conversely, in this study, some ecosystem services such as collection of fodder for livestock from wetlands and forests, were more common to relatively wealthy households as were perceived benefits from conservation and the organisations involved in it. Practically the specific nature of the basic need or want, the particular habitat and ecosystem service which can satisfy that basic need and the types of people who rely on that ecosystem service are very pertinent details for the design of any intervention to mitigate negative impacts or to maximise benefits. The framework presented allows for this detail, beyond simple aggregation and generalisation.

Wellbeing is subjective and local conceptions of what it means to live well may differ with context. Although material wealth played a role, the use of and ways in which ecosystem services were valued was strongly mediated by political factors, culture and social relations. It should not be expected that freedoms are valued any less by the rural poor (Sen, 1999a) and results clearly revealed that autonomy, the freedom to manage land, utilise cultural knowledge and to benefit from associated ecosystem services is an important element of wellbeing. Rwandan agricultural policies have arisen from a narrative which views traditional practices of food production as archaic causes of land degradation (see section 5) and these policies severely affected certainty over land tenure and the ability of people to

produce sufficient food to subsist or earn an income, with negative impacts disproportionately incurred by the poorest groups (Pritchard, 2013). The resulting redistribution of land towards wealthier households, in the absence of alternative employment options or resources, may have implications for future demand of ecosystem services.

Cultural services do not form a distinct category but are dependent on and inseparable from other types of ecosystem services. The analysis of wellbeing presented provides insights for the identification and study of cultural ecosystem services, definitions of which have proven difficult to incorporate into research (Daniel et al., 2012). While provisioning and cultural services are defined as being quite distinct in most ecosystem services work (MA, 2005), our empirical findings support the view that definitions must recognise an overlap between provisioning and cultural ecosystem services (Chan et al., 2012). In fact as the meaning attributed to ecosystem services may often be mediated by social and cultural factors (as reflected in the framework in Figure 4.1), cultural ecosystem services should be considered to be interrelated to both provisioning and regulating services rather than a distinct category. This can be easily explained by considering the widely-accepted view that the knowledge required by smallholder farmers to manage land effectively under environmental constraints and uncertainty may have developed over many generations and represents a cultural resource (Leach and Fairhead, 2000, Berkes et al., 2000).

An understanding of the cultural resources utilised by different groups and of the cultural values placed upon resources and wellbeing outcomes can provide one approach to identifying cultural ecosystem services and to describe related behaviours. Attachment to habitats, types of land use and specific ecosystem services differed between social groups in this study, with many who were brought up in the mountains favouring polyculture and displaying a greater inflexibility in livelihoods, a trait which has also been noted in fisheries (Brugère et al., 2008, Coulthard, 2008). The majority of respondents did not articulate any cultural links to forest goods which, although surprising has also been noted in other Rwandan studies and attributed to processes of development which include a series of enforced changes and associated alignment of views through sensitisation programmes (Martin et al., 2013). In contrast, most Twa, many of whom inhabited tropical forest until recent years, maintained their cultural links to

the forest despite strict protection having turned it into “only a poster,” for them.

Differences in the power of stakeholders at various scales has played a large role in the types of values which have been incorporated into policies governing natural resources and in the contribution of ecosystem services to the wellbeing local people. Throughout the developing world, the benefits of conservation have tended to accrue to distant rather than local stakeholders (Fearnside, 2003, West et al., 2006) and the few local benefits of the strict protectionism described in this study were most often captured by relatively wealthy households and were concentrated in specific locations with high levels of infrastructure. Local perspectives played little part in shaping natural resource management in the study areas. Many local users, and particularly the Twa whose links to the forest have never received official recognition in Rwanda (Lewis, 2006), suffered considerable costs of both the policies which led to the almost complete deforestation of Gishwati Forest and of the protectionist policies which now govern both forest areas. Ecosystem services provided by habitats outside of natural forest were also highly affected by extensive national policies. Wealth, culture and power interacted to determine that a relatively wealthy minority are able to benefit while the majority suffer a reduced ability to benefit from ecosystem services, particularly those stemming from agricultural land.

The insights provided by this study about the values, or indeed lack of values, placed by local stakeholders on services provided by intact natural forest are consistent with the conservation of forest biodiversity. Landscapes may consist of numerous habitats with distinct ecological functioning and in order to draw conclusions about resource use and to recommend conservation and development solutions, these habitats should be disaggregated because their ecological functioning is quite distinct (de Groot et al., 2010). A focus on the links between people and singular habitats such as tropical forest is likely to present only a limited insight into the role of ecosystem services in human wellbeing. The contribution of ecosystem services to the wellbeing of rural households stemmed not only from agricultural plots, owned, rented or shared, but was influenced by access to resources from wetlands, scrublands, private and public forest habitats. Among eight forest-adjacent villages in this study, there was no evidence of rural poverty causing degradation to the tropical forests deemed important for biodiversity. Many of the ecosystem services

important to households neighbouring Nyungwe and Gishwati forests were not specific to intact, primary tropical forest, which is already strictly protected. The dramatic deforestation of Gishwati since the 1990s was primarily due to annexing of large areas of forest for agricultural development projects, military zones or resettlement of refugees rather than rapid deforestation by the local population (Plumptre et al., 2001). Instead the most commonly demanded resources of firewood and fodder were available from alternative habitats. In fact few of the ecosystem services valued by local populations required natural forest vegetation and many were not linked to forest habitats at all. For example soil retention services can be provided even by pasture land as has been shown in areas around Gishwati Forest, even on quite severe slopes (Mukashema, 2007). However even outside of the forest resources such as firewood are obtained illegally and with increasing risk as population increases and potential economic returns increase as land holdings diminish. This represents a potential future threat to forest conservation as relative risk of entering the forest for resources decreases. But the potential for non-native forest habitats to provide vital resources for the wellbeing of local populations actually provides a clear opportunity for the conservation of primary forest, which is key to maximising biodiversity and ecosystem service provision to wider populations (Barlow et al., 2007). Positive outcomes for both the wellbeing of local populations and forest conservation (through reduced or averted illegal use of primary habitats) could be achieved through a more sustainable use of the wider landscape or matrix of habitats outside of the native forest. This could progressively entail a provision of public lands for agreed mixed uses or community based management to provide specified provisioning services and could include afforestation of native species. Schemes which seek to restrict land use (a potential effect of payments for environmental services or REDD+ schemes (Mahanty et al., 2012)) are unlikely to induce the desired behavioural changes to contribute to sustainable ecosystem management in this context, unless they offer sufficiently high financial compensation for households to afford alternatives to key resources, a goal which is rarely achievable in practice (Jindal et al., 2012).

Because the specific definition of wellbeing utilised in this study includes subjective and relational dimensions, it places importance on local perceptions, power imbalances and does not privilege specific knowledge or points of view. Its combination with ecosystem services in the framework

presented may therefore also provide a means to interpret local perceptions and needs and therefore secure just outcomes for local stakeholders alongside sustainability goals. Without this important consideration of local ways of thinking and acting, ecosystem services on its own may be laden with normative values and power imbalances meaning that injustices in ecosystem management, and potential threats to long-term ecosystem management, may persist.

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5. AGRARIAN CHANGE AND THE WELLBEING OF THE RURAL POOR: FROM THEORY TO COMPLEX REALITIES

5.1 Abstract

Agricultural growth is considered to be a major pathway to the achievement of poverty reduction in sub-Saharan Africa. Far-reaching policies have therefore been implemented in Rwanda to promote modernisation, intensification and increased production of marketable crops. This paper describes framing of policy as consistent with a Malthusian land crisis. The solution that framing justifies is a technical and universally applied model to induce intensification along the lines of Boserup's theory of agrarian change, albeit enforced by the state. To place in context and critically analyse the policies and their impacts from a local perspective, a mixed methods, multidimensional wellbeing approach is applied to eight villages in rural Rwanda. The resulting analysis explores variation between households and the different changes affecting people's wellbeing. In this wider context the differential impact of changes and then agricultural policies is addressed. Although agricultural policies have been deemed successful through increased production and food security, such trends were found to be quite incongruous with local perceptions and quantitative evidence further illustrated downward trends in material wellbeing and negative policy impacts, except among a relatively wealthy minority. In promoting rapid modernisation, agricultural policies also sought to eradicate traditional modes of production and severely disrupted local systems of knowledge, trade, labour and interaction which had formed integral parts of local systems of polyculture and social practice. While such consequences are commonly overlooked by dominant approaches to impact assessment, a wellbeing approach enables interpretation of complex interrelated systems and promotes an awareness of local perspectives of change.

5.2 Introduction

The impacts of policies with development goals, such as poverty alleviation, may actually be quite removed from the needs of people living in poverty. Furthermore, development policies sometimes not only fall short of their intended impact, but may actually result in harm, with negative consequences for intended beneficiaries. This ethically-challenging situation arises for several interlinked reasons: Firstly, the complexity and diversity of people's wellbeing and factors affecting it provide a major challenge for the design and implementation of development policy (Ravetz, 2006). The complex material and non-material components of wellbeing are necessarily simplified in the framing and design of broad-scale development interventions, which are often introduced over large scales, affecting millions of diverse individuals and groups. In order to do so, policies tend to both homogenise the subjects of policy and also reduce their wellbeing, poverty or livelihoods to simple, objectively measurable indicators, which may represent poor proxies (Ferguson, 1990, Gledhill, 2000). Secondly, development has become professionalised. The ability of development professionals to understand the complexity of people's wellbeing is limited by money, time, logistics and, perhaps most importantly, the types of knowledge privileged within those institutions (Kothari, 2005). Development objectives and assessments are therefore often made based on a technical rationality guided by expert, scientific models and assumptions which overlook local perspectives and ways of acting. As development may be assessed on a limited set of objectives, harm to intended beneficiaries may therefore be overlooked and policies wrongly deemed successes and repeated on that basis (Mosse, 2004). But thirdly and perhaps most importantly, while the improvement of the wellbeing of those in developing countries may be considered to be the major goal of development, it is but one of multiple values held among the different actors involved, with economic gain, international security and political manoeuvring also playing a role (Hagmann and Péclard, 2010). Development is a process negotiated between strategic actors and misalignment of policy objectives and practice with the needs of those living in poverty may occur because of the multiple aims of international, national and local actors, with those of donor countries, institutions and national states having the greatest influence (Bierschenk, 1988).

This paper firstly considers the framing and implementation of agricultural policies in Rwanda and then, in the context of a relatively holistic analysis of wellbeing in rural Rwanda considers their impacts on rural inhabitants. Using mixed methods social research and applying a multidimensional wellbeing framework (Gough and McGregor, 2007) in three rural sites in western Rwanda, attempts are made a) to explore local conceptions of wellbeing, b) reveal heterogeneity between households through variation in their material and non-material wellbeing, c) investigate the most important changes influencing wellbeing at the household level and finally d) to consider the impacts of agricultural and development policy on wellbeing from the perspective of rural Rwandans. Rwanda provides a fascinating example for such analysis as its rural population undoubtedly suffers great difficulties, faces rapid change and has been exposed to internationally-supported, far reaching policies to promote land reform and agricultural transformation (IMF, 2011, Pottier, 2006).

5.3 Agricultural policy and development in sub-Saharan Africa

Growth in the agricultural sector has been identified as a major pathway to reduce hunger and poverty in sub-Saharan Africa (Diao et al., 2010, Minten and Barrett, 2008), the halving of which is the target of the first Millenium Development Goal. However, pursuit of economic growth may not result in outcomes consistent with poor people's perceptions of meaningful human lives (Nussbaum, 2003) or even lead to poverty reduction, especially in sub-Saharan Africa where levels of inequality are relatively high (Thorbecke, 2013). The processes by which growth and poverty reduction are sought, embodied not only in the framing of policy but also in its practical implementation, play an important role in how well aligned those goals may be with wellbeing as experienced by rural inhabitants.

Agricultural policies in sub-Saharan Africa are often framed around narratives of crisis, for which a solution is required. For example in regions of high population density a Malthusian crisis is often presented (Roe, 1999). Malthus (1888) put forward the theory that whereas population tended to grow exponentially, food production could only increase arithmetically, and the declining resources available to the population would therefore eventually slow that growth through starvation. Where extensification of agricultural land is not possible, policy makers often use this as justification to urge blanket measures to promote agricultural intensification through adoption of measures such as consolidation of land,

irrigation and erosion control, use of improved seed types and application of chemical fertilisers. The solution of intensification through modernising effectively promotes agrarian change along the lines of theories advanced by Boserup (1965), who looked conversely at the effect of population growth on agriculture and suggested that farmers themselves should respond to population growth and corresponding increasing demand for food by intensifying to raise their crop yields. Ruttan and Hayami (1984) developed this idea further to suggest that shifts in demand and prices should result in institutional and technological change among farmers to increase production.

However, despite attempts to drive a green revolution in sub-Saharan Africa, only a low proportion of smallholders have followed that trajectory (Hyden, 2007). Comprehension of the pathways to achieve pro-poor agricultural development have advanced well beyond Malthusian or Boserupian theory and policy strategies have therefore been described as representing “a politics of denial”, due to their oversight of the complex conditions faced by and impacts of policy upon the millions of smallholder farmers who inhabit sub-Saharan Africa (Marsden, 2006). The generalisations that national scale agricultural policies often make about poverty, population growth, environmental degradation and farmers’ responses are problematic because theories of agrarian change do not fit all farmers but apply differentially to people, households or communities depending on economic, environmental, social and cultural heterogeneity (Long, 1984, Bremner et al., 2012).

There is a great deal of experience and evidence to suggest which factors contribute to best practice in the promotion of pro-poor agricultural growth. These factors, stemming from case studies across the globe, including the green revolution in south-east Asia, consistently comprise the incorporation of farmer knowledge, active involvement of farmers in decision-making, customisation to the local context and provision of support to traditional practices (Tendler, 1997, Pretty et al., 2011, Bates, 2005, Van Donge et al., 2012). This suggests that material outcomes are not the only concern for smallholders, but elements such as cultural practices and self-determination must also be considered in the implementation of policies aiming to achieve pro-poor agrarian change.

Local knowledge systems and cultural factors are typically ignored in agricultural development policy (Hyden, 2007) and traditional institutions

are often seen as an obstacle to progress (Cramb and Wills, 1990). The structural adjustment programmes and accompanying agricultural policies in sub-Saharan Africa during the 1970s are a notable example (Woodhouse, 2012). Furthermore national scale policies to promote intensification and boost trade have also been associated with large-scale land grabs by private enterprise, governments and elites, suggesting a potential risk of negative outcomes for smallholders (Lavers, 2012).

Blueprint policies seeking modernisation, marketization and agricultural growth in sub-Saharan Africa have been relabelled and repeated over many years, from the promotion of cash-crops under colonial rule, structural adjustment programs seeking market-orientation in the 1970s through to recent national policies to promote food security (Peters, 2009, Berry, 1997). In addition to poverty alleviation, current debates frequently focus on the concept of food security, also enabled through agricultural growth and trade and reliant on economic actors and competitive markets rather than the social activity of an individual or household (Lee, 2013). Approaches to food security have therefore been criticised for perpetuating the same prescriptive, economic growth-driven policies and overlooking ecological sensitivities and realities faced by rural populations (Altieri et al., 2012). Analyses of simple objective metrics based on expected policy outcomes are insufficient to understand the mechanisms by which agricultural policy may or may not lead to poverty alleviation among rural populations. This requires differentiation between people, deconstruction of the components of their wellbeing and the impacts of change upon them at local and global scales (Peters, 2009). Research aiming to promote improved development must seek to better interpret rural complexity while avoiding ideological bias (De Sardan, 2005).

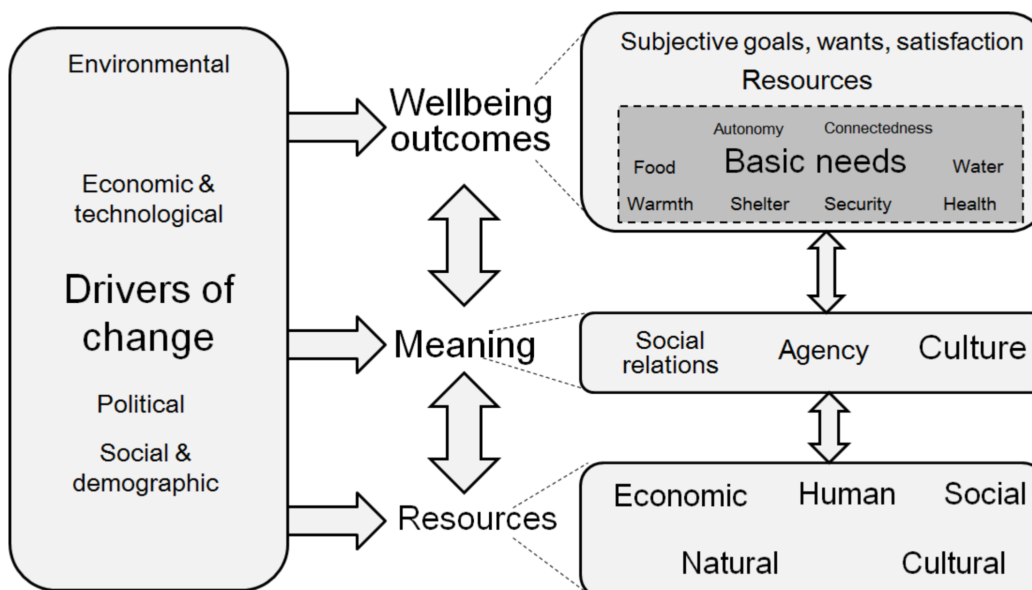
5.4 Methods

5.4.1 Conceptual framework

This study utilises a multidimensional approach to assess wellbeing and the effects of change from the perspectives of rural people (Figure 5.1, see for example Gough and McGregor (2007) for greater detail). This wellbeing approach looks at the diversity of factors involved in “what a person has, what they can do and how they think and feel about what they both have and can do,” and puts the focus very much on people and their own

perceptions, rather than policies, instruments or institutions, providing a more individual and fine-scale perspective (McGregor et al., 2007).

Figure 5.1. Conceptual framework of human wellbeing and impacts of change.



Resources represent "What a person has," building on the sustainable livelihoods framework's five types of capital: natural, human, material, cultural and social (Bebbington, 1999, Scoones, 1998). It is this mix of resources which enables a person to achieve wellbeing outcomes or "what they can do," being basic needs, attaining other resources or achieving wants and life satisfaction in regard to different strands of life such as health or family relationships. Basic needs are described along the lines of Doyal and Gough's Theory of Human Need (1991) and may be equated to a multidimensional definition of poverty, the level below which, for each of the different needs, harm of an objective kind will result. The types of basic needs considered as part of this study and the indicators used to represent them are described in detail in section 1.5 of the introduction and a number are presented in table 5.2 below.

The definition of wellbeing utilised here comprises a subjective dimension in addition to relational and material (White, 2009) to focus on individuals' own ideas of what is important and not the objectively defined perceptions of what others may perceive as a good quality of life. The subjective dimension represents "how they think and feel about what they both have and can do," (McGregor et al., 2009). This subjectivity allows for variation in ways of thinking and acting between individuals and groups of people, in terms of their individual agency and socially constructed intersubjective

elements of social relations and cultural values, beliefs and practices. This depth of research allows for an understanding of behaviour based on factors other than simple material goals.

On an individual level, agency or the feeling of competence to act independently in pursuit of wellbeing differs between individuals through their upbringing and numerous psychological factors, in addition to the extent of different material and non-material resources they can draw upon (Alkire, 2005, Ryan and Deci, 2000). However there is no such thing as a completely autonomous human being and shared experience and social relations always play a part (Comaroff and Comaroff, 2001). Culture consists of shared norms and behaviours which have developed in response to certain environmental, political, economic or social circumstances. Social relations influence the motivations for people's behaviour which may be driven by a wish to help others to satisfy goals or to develop certain relations through shared experiences. This also links to the relational aspect of wellbeing, in that interactions with other people and institutions are crucial parts of wellbeing processes, and relative positions of power, often linked to material and subjective wellbeing, play a role in the outcomes an individual or social group may achieve (Mosse, 2010, White, 2009).

Wellbeing is not considered a state to be attained but rather an ongoing process, influenced by economic, social, environmental and political change (Figure 5.1). The effects of change on a household influence people differentially and are not limited to material effects, but also influence relations, culture and levels of agency and subjective wellbeing. Likewise levels of agency and cultural factors influence the extent to which individuals themselves may act to adapt their livelihoods to environmental change, as shown with fishing communities (Coulthard, 2008), such that smallholders themselves may shape agrarian change.

The study of agrarian change often considers only short timeframes from which it is difficult to understand trends and their impacts, whereas ten to 15 years is required for such interpretation (Berry, 1993). A timescale of ten to 15 years was therefore adopted in this study. In employing this framework, the overall project that this paper developed from did not set out specifically to look at or to criticise any particular policies, but rather sought holistically to assess elements of the wellbeing of rural inhabitants, changes in their perceived wellbeing and to attribute some causes to those changes.

The research permit for this study, obtained from the Rwanda Development Board, did not permit questioning about politically sensitive topics regarding genocide and security, so specific events of 1994 and preceding years were therefore not investigated in any detail.

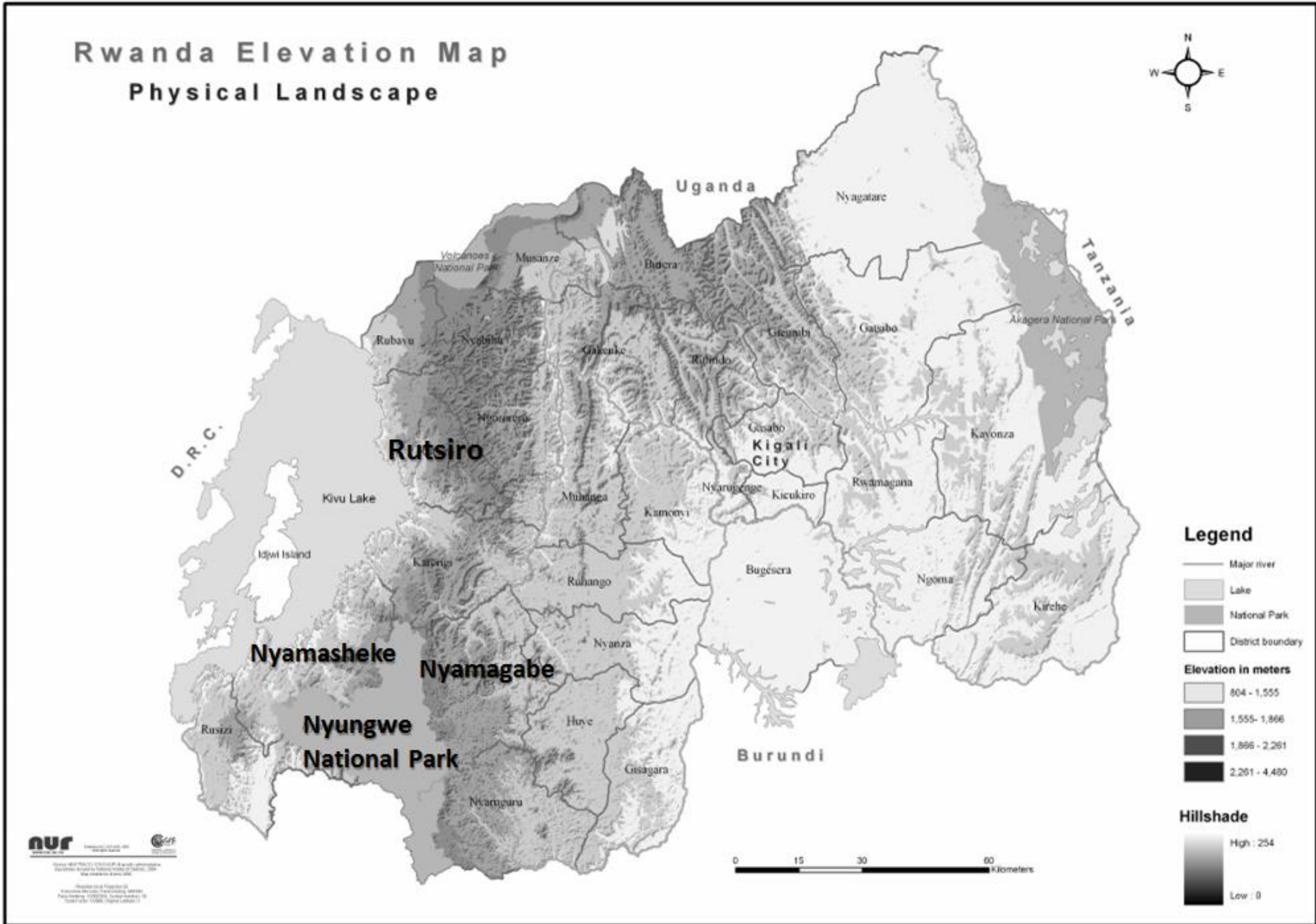
5.4.2 Rwandan context

The mountainous countryside is very densely populated and approximately 84% of a largely poor population depend on agriculture to subsist and provide an income, (IMF, 2011, WFP, 2009). Some argue the country provides a startling example of the Malthusian trap (Diamond, 2005) and land scarcity has even been put forward as a factor in past conflict (André and Platteau, 1998, Percival and Homer-Dixon, 1996). However, Rwanda's progress regarding both the economy and poverty alleviation has been hailed internationally as a development success (IMF, 2011). The country's starting point was one of devastation and institutional failure after the 1994 genocide, which had huge effects on the lives of virtually all inhabitants and diaspora, but consistent economic growth and increases in crop production have been recorded (IMF, 2011) and income based poverty has reportedly fallen from 57% in 2006 to 45% in 2011 (NISR, 2012). However few studies have paid attention to the perspectives of villagers themselves(de Lame, 2005, Ingelaere, 2010), in part because political opposition has been greatly suppressed in Rwanda, policy-making is highly centralised with limited participation and the role of civil society severely limited (Gready, 2010, Beswick, 2010, Reyntjens, 2011).

5.4.3 Research methods

This study was conducted in eight villages across three sites in mountainous western Rwanda (Figure 5.2). Semi-structured interviews were conducted in between 15 and 30 households in each village with randomly selected respondents (165 in total) and one focus group in each village with five to seven of those interview respondents. The three sites were selected because of their geographical and administrative separation in different districts but also because they differ on a gradient of remoteness and in terms of infrastructure and opportunities for both agricultural and non-agricultural income.

Figure 5.2 (overleaf). Map of study sites and protected areas in Rwanda alongside elevation. The three districts in which study sites were located (Rutsiro, Nyamasheke and Nyamagabe) are emphasized. Gishwati Forest lies within Rutsiro district in the northwest, at an elevation over 2,200m. Map provided by the National University of Rwanda Geographic Information Systems Department.



Rwanda Elevation Map
Physical Landscape
Uganda
Tanzania
D.R.C.
Burundi
Kivu Lake
Idjwi Island
Rutsiro
Nyamasheke
Nyamagabe
Nyungwe
National Park
Kigali
City
Legend
Major river
Lake
National Park
District boundary
Elevation in meters
804 - 1,555
1,555- 1,866
1,866 - 2,261
2,261 - 4,480
Hillshade
High : 254
Low : 0

Eight villages were selected across the three sites to give a representation of the variety of social and ethnic groups present in rural Rwanda. There are 30 districts in Rwanda, divided up into over 400 sectors, each containing on average more than 30 villages. One village, usually comprising less than 200 households, may consist entirely of a single ethnic group or people with a similar shared history, whether long-term residents (predominantly Hutu but also Tutsi), returnees from neighbouring countries such as DRC, who were provided with housing and land when they resettled after the 1994 genocide, or Twa pygmies who have gradually been removed from their traditional lives in recently protected tropical forest and provided more conventional homes.

5.5 Framing of agricultural policy in Rwanda

Although land scarcity in Rwanda is not a new problem (Prunier, 1997), some argue that it has reached a threshold where radical change is required (Van Hoyweghen, 1999). The correlative evidence is compelling and is supported by a number of scientific studies and donor organisations (see for example UNDP, 2007): Nationally, average land size per household is only 0.76 hectares divided into four separate plots (ROR, 2010) and as many as a quarter of households are virtually landless (Jayne et al., 2003). The population is expected to increase from close to 10 million in 2009 to between 13.5 and 15 million in 2022, not including any additional influxes of refugees from the Democratic Republic of Congo (DRC) or Tanzania (NISR, 2007). The majority of children between six months and five years in the west of the country suffer from chronic malnutrition (WFP, 2012). A large proportion of Rwandan soil is poor and exhibits several characteristics which can limit crop production (Roose and Ndayizigiye, 1997, Verdoodt and Van Ranst, 2006), being acidic, with limited nutrients and organic content, particularly in the mountainous west (Drechsel et al., 2001, Mupenzi et al., 2011, IFDC, 2010) and erosion causes problems on the 53% of the country's land that has slopes in excess of six degrees (WFP, 2009).

Rwandan smallholders have traditionally dealt with the environmental constraints placed upon them by utilising a system of polyculture. Farmers cultivate a wide variety of crops, dependent upon fine-scale environmental gradients, with varied sowing dates and overlapping crop cycles, such that some crops are mixed in an area and mixes can differ even within a small

plot (de Lame, 2005, Verdoodt and Van Ranst, 2006). In the west of the country, the 2008 national agricultural survey revealed that farmers grew sixty different types of edible crops, with 95% of farmers using traditional polyculture at that time (ROR, 2010). While 13% of farmers grew cash crops such as tea or coffee in 2008, it would most often be grown alongside a mix of edible crops (NISR, 2010).

The Rwandan Land Policy, introduced in 2004, uses a clear Malthusian framing, stating that current trends lead towards "*a completely degraded land as a result of such archaic agricultural practices, unable to meet the food demand of an ever increasing population,*" (ROR, 2004). Clear language is used to describe traditional farming practices, as a "*simple self-subsistence agriculture based on working the land without caring for its conservation or the improvement of its production capacity*," which "*hinders all forms of technical innovations… What prevails therefore is a mediocre agriculture that has no future, characterized by tiny plots on which the prevailing crops are sweet potatoes, sorghum and beans for domestic consumption... Obviously, the share of such agricultural produce that goes onto the market is insignificant, if non-existent.*"

The approach adopted by the Rwandan government, supported by international donors, has been to attempt to monetise the agrarian economy and maximise production of specific crops. The proposed solution is that "*agriculture in Rwanda should be oriented towards specialization…to manage the land and use it in an efficient uniform manner.*'' The Land Policy highlighted that all land was effectively government property and belongs to citizens on a conditional, leasehold basis, restricting further fragmentation of plots through hereditary transfer: To ensure achievement of production goals for production of specific edible or cash crops "*it should be possible for the government to repossess the land if the owner or holder of the land rights has failed to use it in accordance with the law,*" (ROR, 2004).

Subsequently a Crop Intensification Program (CIP) has been introduced to control production through designation of regions for crop types, to make approved seed types and subsidised chemical fertilisers available and to set strict and simple time-scaled targets to make sure that the desired production of those crops is achieved (MINAGRI, 2008). The government

now specifies what each Rwandan can grow in which season (there are two main growing seasons through the year) by determining regional specialisations for individual crops, based upon soils, climate and the needs of the national economy including export demand (Cantore, 2011). Large areas of land were designated suitable for crops such as maize (now considered suitable to be grown in most of the west of Rwanda) or cash crops such as tea. The policy has been implemented nationally through 'imihigo' targets, for which local officials are held accountable if not met at the district level (MINAGRI, 2008).

A change to monocropping represents a significant adjustment for rural smallholders. In total the six crop types now approved nationally through the CIP (wheat, rice, potatoes, beans, maize and cassava) made up only 30% of total national production in 2008 (NISR, 2010). Bananas (cooking and beer types) and sweet potatoes dominated harvests but use of many other crops were widespread such as leaf vegetables (planted by 44% of farmers), taro (33%), pumpkin (25%), peas (22%), soybeans (21%), eggplant (21%), onions (20%), cabbage (17%) and sugar cane (10%) (NISR, 2010). Household consumption patterns illustrate the importance of some of these crops to the population: On a national scale, even the average household consumed only tubers and pulses (mostly sweet potato and beans) six days a week and subsistence production was the main source for sweet potato (61%), banana (63%) and beans (68%) (WFP, 2009). This indicates that consumption, and also local trade, tends to be of low-value products for household consumption.

As a result of the CIP, use of provided seeds rose nationally from 3% to 40% of households between 2007 and 2011, fertiliser use increased from 8 kg per hectare to 23 and production of the promoted crops increased accordingly (MINAGRI, 2011). Gains in production of the six prioritised crops of maize, wheat, potato, cassava, rice and bean crops all exceeded their national targets in 2008 on the way to a 30% proposed increase between 2006 and 2012, as did production of tea (IMF, 2011). The area under production of the crops is planned to increase from less than half a million hectares in 2007 to approximately 1.8 million hectares in 2013 (MINAGRI, 2011). Crop production per capita has risen steadily since 2001 but since 2008 has further risen to levels comparable to those experienced pre-1994 (data from http://data.worldbank.org/country/rwanda). The Ministry of Agriculture (MINAGRI, 2011) reported that "*the program has*

provided the much needed foundation for a positive change in Rwanda's agriculture development. CIP has also revealed the massive potential that exists in the country in increasing the smallholder agricultural productivity."
But how valid are these claims of agricultural development? Because food production has been shown to be increasing and large-scale measures of poverty to be decreasing rapidly, it is easy to draw conclusions that the wellbeing of rural populations should also be increasing. The following section reveals a local perspective of changes in wellbeing.

5.6 Results

This section firstly explores local conceptions of wellbeing and secondly differentiates households and groups to show the variation which exists within and between the three sites. Subsequently the wellbeing impacts of various changes occurring for rural households are assessed and the role of different drivers of those changes is explored.

5.6.1 Local conceptions of wellbeing

To explore local conceptions of wellbeing, focus groups were conducted in each village, asking what it means to live well and what a household required to achieve a satisfactory quality of life. This captures the subjectivity of wellbeing through collectively held values in the particular context. Results yielded eight types of resources, both tangible and intangible, which were put forward by respondents and agreed as being priorities for wellbeing in at least six of the eight villages. Land was considered a crucial resource in order to produce food for the household, to earn income from trading crops and utilise knowledge of farming practices. Livestock was valued alongside land because through production of manure it enables effective crop growth. Income from some type of work was also considered essential for a household, reflecting how few households depend purely upon their own farming. Suitable shelter was considered essential to guard from the extremes of cold and rain experienced (villages in this study were situated at altitudes up to 2400 metres above sea level). These four represent the main tangible assets a household may have access to, which were consistently linked to local level wellbeing and variation in their distribution is analysed below to create different socio-economic groupings. In terms of human resources, health was consistently prioritised as enabling people to work and contribute to household needs. Infrastructure, in the form of roads and to a lesser extent

electricity, was highly prioritised for its role in the potential prosperity of a village, giving rise to options for trade and work. Variation in levels of infrastructure is addressed to some extent by the selection of study sites. The final two elements of wellbeing listed above are less material in nature and support the use of a multidimensional definition of wellbeing and more qualitative methods to assess the impacts of change or of policies on rural Rwandans: Sharing and interaction between households and within villages was seen as a crucial safety net for the poor and a key part of wellbeing, and; the freedom to make decisions about how household members attempt to meet their own subjective goals was, perhaps surprisingly, given specific mention in focus groups in all eight villages. However some of the tangible assets mentioned are also valued in non-material ways. The meaning attached to land, livestock and various natural resources by individuals was not simply material but was subjective, being strongly affected by social and cultural values (see section 2 of this thesis). The nature of and variation in these subjective values is discussed further in the next section.

5.6.2 Variation between households

To attempt to differentiate between groups of households based on socio-economic status, a hierarchical cluster analysis was conducted to create meaningful groups of households based on the four easily quantifiable material and human resources put forward in focus groups: land, livestock, occupation and shelter. The analysis illustrates some realities regarding levels of wellbeing within the sample, to highlight patterns in distribution of these resources and to provide a means to subsequently differentiate the impacts of policies on households (alongside gender, ethnicity and geographic location). Clustering was agglomerative using between-group linkages and squared Euclidean distances with standardised values to account for the different scales of the four variables described below.

Each variable was split into category bands for the analysis: Land size was converted into six categories: less than 0.1 hectare (17%), 0.1 to 0.25ha (23%). 0.26 to 0.5ha (22%), 0.51 to 1ha (19%), 1.1 to 2.5ha (14%) and >2.5ha (4%). Land holdings, including rented or shared land through informal tenure regimes, varied considerably, but were generally very small. Only 31% had land equal to or greater than the average holding of 0.81 hectares, half of households had less than 0.4 of a hectare and 8% had absolutely no land.

Livestock was split into four categories: Those with no livestock (33%), those with only smaller livestock (sheep, pig or goat) or who have borrowed a cow (17% and 14% respectively), households who own one cow (22%) and those with two cows or more (14%). House size and type were split into three easily observed categories: very small houses of one room or very basic constructions of earth and sticks (25%); small houses of three rooms or less, with a higher quality construction using large blocks (42%); and larger houses built with large blocks or manufactured bricks (33%).

Rural livelihoods are extremely diverse and 25 different income streams were identified across households. Households very rarely engage in only one of these. Income streams were divided into 4 categories: subsistence agriculture or agricultural labour only (17%); other labouring work such as tea labour, building, charcoal making or brewing (25%); those with their own trade such as crop trade and those who own a shop (36%); and finally professionals such as builders, teachers, administrators, mechanics or drivers (22%). Households supplement what they are able to grow themselves with income from a diverse range of activities. Indeed, not one household from 165 engaged only in subsistence agriculture and only four gained income from crop trade alone. Overall, 35% practiced subsistence agriculture along with other livelihoods, often multiple types: 60% of those households worked as agricultural labourers, 26% grew trees for sale, 24% traded small goods such as banana beer, milk or flour, 21% made charcoal or cut planks and 14% ran their own trading outlet or beer shop.

The hierarchical cluster analysis revealed four main socio-economic groups within study sites and exposed a clear ranking in terms of material and human resources (Table 5.1). It also displayed the extent of poverty within study sites. 34% of households could be classed as labourers with no land or only very small plots and a further 38% as resource poor workers, leaving only 28% who could be classed as belonging to two relatively wealthy ‘elite’ groups (Table 5.1). One household was shown as an outlier and could not be grouped with others, being landless professionals (a relatively wealthy couple who lost all of their land to a government reforestation project without compensation). Analyses of variance revealed that groups one to four were significantly different from one another at a 5% significance level, except for the relatively wealthy households without livestock, whose livestock holdings were unsurprisingly similar to landless labourers.

Table 5.1. Characteristics of groups identified through hierarchical cluster analysis relating to land, livestock, occupation and housing.

	Landless labourers (n=56)	Resource poor workers (n=63)	Relatively wealthy, diversified farmers (n=40)	Relatively wealthy professionals without livestock (n=5)
Land	Very little or no land, average 0.13 ha	Small, average 0.56ha	Relatively large, majority have more than 1ha, average is 2ha	Relatively large, average 2.25ha
Livestock	Majority have no livestock. 7% own a cow	29% own a cow, majority without livestock use land for other means such as trees	Nearly all own cows	No livestock. All grow trees commercially
Occupation	All reliant on labouring and subsistence earning 40p to £1 per day.	Regular low-paid work or diverse income streams. 43% trade crops.	Own business or professionals. 68% trade crops	All are professionals and trade crops
Housing	Small and basic houses	Mostly medium. The few with small, basic houses all have land and higher occupations	Relatively large houses	All have large houses

The difference in resources available to different groups has clear implications for their wellbeing outcomes, including their ability to meet basic needs (Table 5.2). Agriculture is without doubt closely linked to the wellbeing of rural Rwandans, as only five households (3%) engaged purely in off-farm employment. Households with little land were unable to produce sufficient food or income from it, particularly in the absence of livestock to provide manure with effects on their ability to meet basic needs. For many, additional work was not able to provide sufficient income to make up the shortfall in food production and 39% of the overall sample population failed to eat at all on at least one day per month, an indicator used to represent a failure to meet the basic need of securing enough food for the household in this study. Those unable to meet this basic need included 75% of landless labourers (Table 5.2), for whom food scarcity was likely to occur more frequently, as planting and harvesting times only produce short periods when an income of between 40p to £1 per day is available. More than half of landless labourers failed to afford health insurance, despite nearly a third of households in that category being paid for by the government or donors (Table 5.2). For 89% of households in the landless labourers category the only access to fuel for warmth and cooking was through illegal collection of wood from surrounding habitats (Table 5.2), which commonly carries risks of being fined or beaten. The category of landless labourers bears a strong resemblance to those categorised as living in 'chronic poverty' in earlier studies of multidimensional poverty in Rwanda (Howe and McKay, 2007).

Table 5.2 Key characteristics by socio-economic group, socio-ethnic group and by study site.

	Socio-economic groups				**Geographic Locations**			**Average (range by village) (n=165)**
	Landless labourers (n=56)	**Resource poor workers (n=63)**	**Relatively wealthy, diversified farmers (n=40)**	**Relatively wealthy without livestock (n=5)**	**Connected to markets with employment (n=50)**	**Remote, some infrastructure (n=75)**	**Very remote, lack of infrastructure (n=40)**	
Average size of land held by household in hectares (standard error)	0.13 (0.02)	0.56 (0.05)	2.00 (0.30)	2.25 (0.45)	0.61 (0.12)	0.74 (0.11)	1.20 (0.30)	0.81 (0.3-1.8)
Trade of crops	4%	43%	68%	100%	56%	19%	50%	38% (5-67%)
Food scarcity – family goes at least one day per month without eating	75%	27%	13%	20%	32%	37%	53%	39% (10-87%)
Without medical insurance	55%	35%	28%	0%	34%	48%	28%	39% (20-75%)
Medical insurance paid by government	32%	11%	3%	0%	8%	23%	13%	16% (0-67%)
Collect firewood illegally	89%	54%	43%	0%	50%	57%	83%	61% (30-93%)
Grow trees for trade	0%	27%	58%	100%	22%	37%	15%	27% (7-65%)
Female headed households	27%	22%	10%	0%	22%	23%	13%	20% (10-35%)
Long term residents	30%	41%	25%	4%	98%	52%	60%	73% (13-97%)
Returnees from Congo	7%	46%	39%	4%	2%	25%	21%	17% (0-85%)
Batwa	88%	12%	0%	0%	0%	19%	8%	10% (0-87%)
Connected to markets with employment	32%	50%	14%	4%				
Remote, some infrastructure	33%	37%	25%	3%				
Very remote, lack of infrastructure	38%	25%	35%	3%				

Greater proportions of female headed households were categorised in the lower two socio-economic groups (Table 5.2), though gender difference was not as striking as the divide between socio-ethnic groups. Resources were spread unequally across socio-ethnic groups, with 88% of Twa being classed as landless labourers and not one Twa household falling in the two highest socio-economic groups (Table 5.2). In fact the high proportion of landless labourers identified in this study may be the result of the high proportion of Twa households included, 10%, relative to the national average of 1%. In contrast, 29% of long-term residents and 43% of returnees from DRC were classed in the higher two categories (Table 5.2).

Although land use differed with individual priorities and agency, it was also affected through social and cultural resources and values. Preferences for land use varied across the three socio-ethnic groups, with long-term residents primarily practising polyculture, returnees holding more livestock and more readily switching to plant trees on their land for trade. This differed for Twa who gave greater priority to paid labour and access to natural resources compared to other groups.

There were clear differences in land holdings between study sites. At the site with greater infrastructure and more employment opportunities, households held less land on average (Table 5.2). Land holdings were in fact highest in the most remote site, where 50% were able to trade some crops. However 53% suffered food scarcity (at least one day per month without a single meal) compared to 32% in the least remote area. This suggests a more distinct division between the poor and the relatively wealthy in the most remote area, illustrated by the fact that the wealth distribution was more polarised, with the lack of alternatives to agricultural labouring reflected in the lowest proportion of resource poor workers (25%, Table 5.2).

5.6.3 Changes affecting wellbeing and their drivers

This section presents some of the most common changes, both positive and negative, affecting the wellbeing of respondents, in order to provide insights into the complexity of rural change and to provide context to the changes and policies affecting agriculture described in more detail in section 5.6.4.

Given the severity of insecurity before, during and in the years subsequent to the 1994 genocide, both within Rwanda and across its borders, it is important to stress both the lasting impact of those events and the effect of improved security on people's wellbeing. Greater physical security through reduced militia activity and control over Rwanda's borders had realised wellbeing gains for all respondents and were due to government policy and military presence. Many people interviewed lost family, homes and possessions during the 1990s. Many had to move and to start life again, often via refugee camps. In the late 1990s militias still operated in the west of the country, took money, food and livestock violently and attempted to assimilate others to join them. Crime at that time was generally rife compared to 2012, when only occasional theft of crops or small livestock were reportedly common. Security improvements were viewed as having been especially influential on the lives of returnees from DRC, who faced great uncertainty when they immigrated in the mid to late 1990s, representing perhaps the greatest change to their wellbeing.

It is therefore perhaps surprising that despite wellbeing gains highlighted in certain areas of respondents' lives, specifically regarding physical security and the provision of health and education to rural areas, the vast majority of respondents perceived wellbeing as a whole to be decreasing. The reasons put forward for this trend were numerous and can be attributed to a number of environmental, economic, social and political drivers, beyond increasing population and decreasing land size.

There were strong downward trends in key material resources within the three study sites: Many households had sold land over the previous decade when faced with a need to feed their family or to meet other costs associated with basic needs. 36% of landless labourers sold land and had therefore only become landless labourers during that period (Table 5.3), which equates to 12% of the entire sample population having fallen into that category within approximately a decade. Twa households appeared to sell

land far more readily than other groups, in part due to their limited cultural attachment to agricultural land.

Table 5.3. Selected changes affecting household wellbeing over the ten years to 2012.

	Socio-economic groups				Geographic Locations			Average (range by village) (n=165)
	Landless labourers (n=56)	**Resource poor workers (n=63)**	**Relatively wealthy, diversified farmers (n=40)**	**Relatively wealthy without livestock (n=5)**	**Connected to markets with employment (n=50)**	**Remote, some infrastructure (n=75)**	**Very remote, lack of infrastructure (n=40)**	
Land decreased due to sale	36%	21%	33%	0%	10%	40%	30%	28% (5-55%)
Land increased due to purchase	2%	14%	38%	40%	10%	16%	25%	16% (7-25%)
Loss of agricultural trade	27%	43%	32%	0%	8%	59%	18%	37% (10-85%)
Sold livestock	21%	51%	68%	60%	34%	51%	50%	45% (5-65%)
Food prices cause change in food type or regularity	100%	78%	75%	60%	62%	97%	88%	84% (50-100%)
Began using chemical fertiliser	16%	30%	53%	80%	40%	21%	43%	32% (0-47%)
Credit taken from bank	4%	14%	28%	80%	44%	20%	40%	32% (0-73%)
Joined cooperative	20%	35%	45%	40%	32%	9%	10%	16% (0-55%)
Began cultivating tea	0%	10%	30%	40%	10%	4%	30%	12% (0-40%)

Population increase was perceived to be one cause of reduced land holdings, though increasing costs of living and the impacts of development policies were also factors, discussed below. Reductions in land holdings were not consistently observed across households, but rather differed across socio-economic groups, and while 28% of largely poorer households sold land, 16% of households, mostly in the two highest socio-economic groups, were able to acquire more land than they had ten years previously (Table 5.3). This change equated to increasing inequality in land holdings rather than widespread scarcity. Agricultural extensification has also been possible in Rwanda, even in recent years, as large areas of non-agricultural habitats, particularly wetlands, were recently converted through government initiatives (REMA, 2009). And protected areas were an obvious choice to provide land to refugees after the genocide such that their size decreased substantially at that time (Bruce, 2007, Plumptre et al., 2007), a change which occurred at one of the three study sites.

Some authors claim that land scarcity is so extreme in Rwanda that conflict within and between households has increased (Takeuchi, 2011, Wyss, 2006). Among the sample, conflicts over land were seen in ten cases, 6% of households. However inter-household disputes could not be attributed solely to land scarcity. Polygamy, noted in as many as 10% of sample households, and assertion of land rights disputed between wives after a husband's death or over which a husband had assumed sole control, was the primary factor causing these disputes, not hereditary transfers or historical claims.

In the face of reduced soil fertility, manure was seen as a requirement for soil management to enable crop growth and livestock ownership was the major aspiration of many respondents. However, conversely, reductions in livestock holdings were dramatic in the study areas: 45% of households reduced livestock holdings (Table 5.3), representing 76% of those who owned livestock ten years previously. This reduction was partly driven by a 2005 law requiring livestock to be caged if the owner does not own pasture but also by the need to meet increasing costs of living.

Market fluctuations and price changes have considerable implications for the world's poor, representing a shock over which they have little control yet to which they are becoming more and more exposed (Jayne et al., 2010). Prices fluctuate due to variability in harvests through environmental variability and higher import prices through changing fuel costs and global

markets, both economic and environmental drivers. Local wages do not match food prices closely and remained quite static while prices of common staples such as potatoes more than doubled over six months during 2012 (New Times of Rwanda, 8th October 2012). 84% of households interviewed stated that they had changed the type of food the household could eat or reduced the frequency of meals due to price changes as the cost of common foods such as beans, sweet potatoes and potatoes intermittently increased, including 100% of landless labourers and very high proportions for the two most remote sites (Table 5.3). Few households gained from being able to sell goods at higher prices as in rural areas margins tend to be very small and the elasticity of demand high. For example increases in prices of sorghum caused half of the 10% of households trading beer to stop indefinitely.

Changes in the cost of living included substantially increased costs imposed by the government itself for building materials and for health insurance. In 2011 the cost of health insurance tripled from approximately £1 to £3 per person per year and this was a frequently repeated concern for the wellbeing of respondents. The cost for an average house of seven people may equate to six weeks of agricultural labouring, work which is rarely available for such long periods. As a consequence, despite medical insurance being a high priority for nearly all households and strongly encouraged by local authorities, the price change contributed to the low proportion able to afford insurance, especially among poorer households (Table 5.2) and were also a factor in some selling land or livestock. These far-reaching economic drivers had a considerable effect on the agency of households in this study, affecting what people perceived they were able to achieve with what they had, particularly on the investment or risks they took in terms of making housing improvements, investing in stock for trading or inputs for agriculture and even on how they interacted with others.

A reduction in levels of cooperation and sharing between households was a much maligned change among many respondents. Sharing of harvests and bought produce were reported to be common occurrences between friends and neighbours in the past. Even livestock and land were gifted to individuals at traditional gatherings. Of 22 households suffering food scarcity, with very basic shelters, unable to afford health insurance or firewood, 19 referred to donations they still received from others, providing a valuable safety net. However a number of drivers had caused a decline in

the extent of social interactions including reduced harvests and material wellbeing relative to costs of living, increased market-orientation among smallholders through national and global social and political influences and also the discouragement of locally-produced banana beer and forms of traditional gathering by local authorities. While wealthier households generally considered “the new vision of development” to be superior to traditional practices and viewed these changes as overwhelmingly positive, many more revealed feelings of being socially marginalised through their inability to visit others, perform acts of kindness to others or to participate in social events.

The rapidity of change occurring is underlined by the decrease in the proportion of households trading their own edible crops over the preceding decade. 37% of the sample ceased trading crops over the period, a key income-generating activity for most households. The proportion reliant on subsistence agriculture and labouring therefore swelled with obvious effects on a household’s ability to meet their basic needs. Although alternative livelihood options to agriculture were few for the majority, loss of resources and trade were least pronounced in the site with highest levels of infrastructure and employment options (Table 5.3), suggesting that the diversity in livelihoods there and more frequent work opportunities may reduce the vulnerability of those households to change.

Although many households continued to produce food from their plots, 27% of households, primarily wealthier households, began to grow trees on their land for trade (Table 5.2), not specifically due to soil fertility loss or inability to grow crops but also because demand for planks and charcoal provided relatively good economic returns for less effort or because the family had moved to a new home away from their plots. Decreases in the land area allocated to crop growing has the effect of both reducing labouring opportunities and potentially increasing prices of specific crops, potentially exacerbating land scarcity issues.

The wellbeing of rural inhabitants was not only linked to agricultural land use. Reduced access to resources from wetlands, private forests, non-native public forests and the remaining protected native forests represented important changes to rural households as those habitats either came under greater protection or were converted to agriculture. Environmental scarcity may therefore be a more relevant phrasing of problems in Rwanda than

simple land scarcity (Percival and Homer-Dixon, 1996). Firewood, fodder for livestock, building materials including timber, ropes and clay earth for blocks, medicinal plants, minerals, cultivated crops, meat and other foraged food types were all commonly utilised resources, which often contributed substantially to livelihoods as well as household subsistence and also encompassed cultural and social aspects to their use. Loss of access to these resources increased the requirement to purchase items such as building materials, the need to seek alternative livelihoods and, importantly, for increased production from agricultural land. This naturally varied by household but was particularly acute for many of the Twa households whose very cultural identity was closely tied to forest habitats and resources (Lewis, 2000)(See sections 3 and 4 of this thesis).

5.6.4 Impacts of agricultural and development policy

Autonomy, revealed to be an important element of life satisfaction in other Rwandan studies (Abbott and Wallace, 2012), was put forward as a key element of wellbeing in focus groups in this study. A variety of policies seeking to modernise rural communities were highlighted by respondents as important changes impacting their wellbeing. Alongside the agricultural policies discussed below, villagisation, housing and trade building improvements and grazing restrictions are all intended as modernising, development policies, promoting economic growth as well as poverty reduction goals. Yet lack of participation, strong enforcement of policies with fines, and the increased uncertainty and financial burdens they impose, had a negative impact not only on material wellbeing but also on certainty over tenure of land and buildings and had further impacts on people's perceived ability to act to achieve their own subjective goals. The villagisation or 'imidugudu' policy has strong links to the land policy. Its aim was to move widely scattered rural households to designated centres, ostensibly to facilitate the future provision of services such as electricity to those areas. The Land Policy (ROR, 2004) states that "*the scattered type of settlement does not either lend itself to a more profitable use of rural land. Grouped settlement is the only and unique method that will allow good planning of land use and rational land management in the context of land scarcity in Rwanda.*" While the policy intends to facilitate rapid development (the target is for all households to be within grouped settlements by 2020), this has the effect of placing onerous costs on households, detaching them

from their land and creating further uncertainty over not only future ability to generate income and ability to meet other costs such as health insurance and education, but also uncertainty over tenure of housing and land (Newbury, 2011). Negative effects of similar policies in neighbouring Tanzania and in Ethiopia are well documented (van Leeuwen, 2001) and the encouragement and in some cases enforcement of remote households to move had negative impacts of 14 households, nearly 10% of those sampled, while just two shared positive opinions of the policy.

Agricultural policies were by far the most influential on rural wellbeing and represented a substantial change. Growing multiple crops is a method to reduce vulnerability to crop failure, high prices for alternative foods at market and to reduce times without harvestable staples in the face of highly sloping land and extreme and unpredictable dry and rainy seasons. Sweet potato, banana, taro, leaf vegetables, cabbage, sugar cane and peas were important crops for rural trade alongside maize, beans and potatoes. CIP began to influence rural areas in this study from around 2010, with intensive growing of single edible crops such as maize and beans (alternated between the two growing seasons) introduced gradually to two of the three study areas and tea production prioritised in the third. Among respondents, many farmers had begun farming the crops required and in response some households, primarily those in the relatively wealthy socio-economic categories, have been able to develop their agricultural capital (Table 5.3). This provided some benefit to the minority of households engaging in crop trade, who took fertilisers on credit and had organic inputs to add to them so that when applied to the average household, or specifically to the elite third of rural households shown in relatively wealthy socio-economic groups (Table 5.3), the policy may be seen as a successful one. However, the majority of households were unable to apply this model, and only six households stated support for the policy whereas 44 described that it had affected them negatively, despite the obvious reluctance of respondents to voice strong opinions about government policy and the very early stages of implementation of the policy, particularly at one of the three sites. Only 38% of sample households grew crops for trade (Table 5.2), which means that others, the majority of whom struggle even to meet basic needs of sufficient food, firewood or access to health care, are very unlikely to take fertilisers on credit for fear that they would be unable to repay the loan.

Farmers have been obliged to plant approved seeds on small plots without capacity to apply any inputs, despite their perception that their land is unsuitable for growing that crop (frequently the case for maize in this study). This resulted in insufficient production to subsist and in some cases such a low quality crop that the produce could only be sold as fodder for livestock. Wealthier households have been able to take advantage of the subsequent sale of resources by poorer households (Table 5.3) thereby reinforcing the distinctions between landless labourers and the better-off, diversified rural dwellers and, in doing so, creating a burgeoning underclass, who find it increasingly difficult to find ways out of that poverty trap.

Managing levels of uncertainty is seen as a goal of governance which should result in greater resilience (Zinn, 2008), yet in this case uncertainty is aggravated by the very policies seeking to increase resilience. If people are seen to be planting the wrong crops they may be fined, have those crops forcibly removed by local administration (Ansoms et al., 2008) or even have their land taken if considered underutilised, or if a household is unable to fulfil the state's expectations of the market oriented farmer (Huggins, 2009). When uncertainty levels are high, the poor are more likely to try to maintain what they have than to try to accumulate more by engaging in new and risky behaviours (Mosley and Verschoor, 2005, Wood, 2003). Rural people hear about developments which greatly affect their lives through sporadically called public meetings and series of rumours, making it very difficult to be well informed about the future (Bruce, 2007). This means that poor households may be less inclined to invest in new livelihoods or in agricultural inputs and may instead sell land before it can be taken from them, thus accelerating the trend towards redistribution of land towards wealthier households.

The changes brought about by CIP also influence a broader set of subjective, nonmaterial functionings and values. Cultural identities and the meanings attached to places are influenced by interrelated forms of knowledge, land use, access and commerce (Gupta and Ferguson, 1992). Crop specialisation has restricted the use and continuation of the complex local knowledge systems, harvest times and associated social patterns, labour availability and ultimately the networks of trade, communications and relations between villages and their inhabitants, who grew different crop varieties or would buy and transport them to nearby areas to exchange or

trade with others. The usual streams of villagers carrying, for example, sugar cane from wetter conditions at lower altitudes upwards to trade, not only for money but often simply to exchange with those who grow potatoes (which can resist frost and drier soils) have now been disrupted. The villages which previously traded with one another based on their competitive advantages now frequently grow the same crops, albeit with differing fortunes. Trade patterns are therefore noticeably shifting to be dictated by local administrative borders as those are the lines by which crop selection is established and enforced, not the ecological gradients which have become engrained in those complex, culturally linked systems. This affects the very meaning of the farming practices and production as social and cultural elements which have been long-established are quickly and severely disrupted. Despite the challenges infrastructure provided, those locally-developed systems were not entirely rural or separate from wider markets and the national economy but in many instances, through wholesalers or traders, those goods found wider market linkages. But those systems did fulfil local objectives and seasonally-varying subsistence requirements alongside.

In areas where cash crops such as tea have been deemed suitable, the government's drive to increase income from exports has had even more dramatic effects on household level wellbeing, as were evident in one study site. In these regions, large areas of land are permitted only for tea cultivation and land tenure has effectively returned to the government. 12% of households had begun to cultivate tea, although the majority were clustered in that one study site where 30% of households had converted large areas to tea plantation (Table 5.3). Seedlings were provided to households, which take three to four years to reach maturity and if a household proves unable to manage that land effectively enough, the government will reallocate that land to a household deemed more suitable, often leaving the original owners without compensation. Rather than increasing certainty and likely returns for people from their plots, the policy actually increases uncertainty and the likelihood of being expropriated. In public meetings inhabitants have been informed that the remaining land used for crops will also be converted to tea in the future. This has had the effect of a 'land grab' on local people, whereby the landscape has quickly changed in ownership and the use of that land has changed to their detriment. At a national level, 17,000 smallholder families became involved

in tea farming by 2009 with "*satisfactory development outcomes*" for income and assets, human and social capital (IFAD, 2011). But tea growing has proven quite unsuitable for those with small landholdings who need to allocate land to crops and cannot afford to pay membership fees for required coops and for labourers (IFAD, 2011), meaning a likely reallocation to more wealthy households. While it is hoped that increased areas of tea plantation may increase the amount of labouring opportunities for locals, many voice concerns that they lack the necessary skills and that the work is seasonal and physically demanding making it only suitable for the young and healthy. While 30% of households at one site had begun farming tea under the guidance of local authorities, only one household spoke positively about that change whereas 62.5% of households voiced negative opinions about farming tea themselves or the impacts of tea rather than crops being farmed in their surroundings. Previous research has shown that within Rwanda tea labouring opportunities attract large amounts of migrant labour, minimising positive effects to local households (Mulley and Unruh, 2004). Long training periods of lower pay and wages in arrears also form barriers to many for such work.

5.7 Discussion

Agricultural growth is considered to be the key pathway to poverty alleviation in sub-Saharan Africa. Agriculture and the institutions which control it are crucial to the wellbeing of rural populations worldwide and results of this study show, as others have (Norton, 2004), that land, land use and land policy are key elements in the wellbeing of rural inhabitants, not to be detached from pathways into or out of poverty. Through the Rwandan Land Policy the need to maximise production of crops to promote economic growth has been embedded in law. The policies employed assume that growth will lead indirectly to increases in the wellbeing of poorer households, yet the assumption that growth, orchestrated in a top-down manner, will be equitable, has received criticism both at the Rwandan level (Ansoms, 2011, Cantore, 2011, Des Forges, 2005, Huggins, 2009) and for sub-Saharan Africa as a whole (Thorbecke, 2013, Stein, 2011).

Attempts to assimilate 'backward' rural economies into international markets by maximising yield per hectare using new crop varieties based on analyses using average climatic and soil data have been frequently repeated, particularly in sub-Saharan Africa, and overlook many of the

factors which are so important to their wellbeing (De Sardan, 2005, Peters, 2009). Numerous changes impact different households in various ways due to their resources, the outcomes they can achieve and the subjective meanings conveyed to resources and outcomes, based on individual agency but also social and cultural values. The simple Malthusian framing of agricultural problems (albeit with some correlative and scientific support) and labelling of traditional practices as 'archaic' serve to decontextualize the numerous dimensions of people's wellbeing and to depoliticise their needs in favour of a simplistic solution based on a decreed vision, one of a modern, market-oriented Rwandan smallholder. The identified solution involves intensification by all smallholders through crop specialisation and the application of chemical fertilisers, which is quite evidently a polar opposite to the traditional polyculture system. This represents an outcome similar to Boserup's theory of agrarian change although rather than being driven by smallholders in response to reducing levels of resources, it is enforced by a state which has identified a need for centralised planning. Results from this study reveal that the orientation of agriculture away from traditional practices of polyculture and towards maximisation of yields for single marketable crops has impeded longstanding patterns of trade, labour markets and cultural resources.

In development policy, the mechanisms by which growth may reduce poverty are ill-defined and the fact that growth can also have negative impacts on individuals ignored (Mosse, 2008). Policies tend to overlook evidence of the vulnerability faced by particular groups (Smith and Stirling, 2010, Ostrom et al., 2007), a vulnerability which is intensifying for many rural poor people due to increasingly rapid change (Leach et al., 2010). Risks are particularly prevalent in Rwanda due to the high importance of agriculture in meeting basic needs and the vulnerable existence of so many. With a limited off-farm economy or lack of thriving industry that the burgeoning population can turn to for work, the wellbeing of rural Rwandans rests upon the very ambitious policy of crop specialisation (Takeuchi and Marara, 2009, Pottier, 2006).

Without assuming the local perspective to be inherently superior to the implemented intervention, results revealed that the policy not only inhibits social and cultural aspects of rural life, but actually increased levels of poverty in the three rural areas in this study. Increasing rural poverty has also been noted in the few studies applying similarly local scale research in

rural Rwanda (Ansoms and McKay, 2010, WFP, 2009). The tenure uncertainty caused and the accompanying specialisation required essentially force a distinction between the relatively wealthy minority, who are able to intensify their agriculture along Boserupian lines and fulfil the criteria of a market-oriented farmer, while accelerating the decline of the majority who with insufficient material resources are pushed on a Malthusian trajectory, towards landlessness and a vulnerable dependency on sporadic labouring opportunities. This serves to polarise the rural population and increase both poverty and inequality as many resource poor workers gradually lose their land, livestock and other productive assets, with no power to terminate the contract. When households dependent upon labouring wages suffer shocks such as sickness, death of a family member or sudden loss of resources they suffer food scarcity much more quickly than if they produce their own food (WFP, 2009) and the effects of the policies therefore serve only to marginalise many rural inhabitants, increase vulnerability and reduce local food security (Pritchard, 2013). The growing ranks of landless labourers (as shown in this study) are inconsistent with Rwanda's continued economic growth since 2008 (IMF, 2011) although with a Gini coefficient consistently above 0.5 since 2000, Rwanda is placed among the least equal countries in the world (http://data.worldbank.org/indicator/SI.POV.GINI, accessed 9th July 2013).

While complexity is difficult to capture in development policy, impact evaluation and potential adaptation are critical areas to limit potential costs of intervention and to enable learning and adaptation. In Rwanda there are very limited attempts to ascertain impacts on basic needs, livelihoods, cultural identities or on the vulnerability of rural households (Ansoms and McKay, 2010) and the lack of scrutiny applied to these policies internationally means limited capacity to mitigate negative effects on rural populations (Holvoet and Rombouts, 2008).
Recorded increases in production of specific crop types and the evaluation of policies as successes on the basis of national food security, itself a contested term, is quite incongruous with the realities of decreasing wellbeing and decreasing local level food security as perceived by the population themselves. The lack of a more holistic, local level perspective suggests that claims of development success should be treated with caution. Unregistered policy impacts allow similar policy solutions to be applied repeatedly even in the same locations (Mosse, 2004) and very similar policy framings and solutions to those implemented in Rwanda have

been described over the last 50 years in other parts of sub-Saharan Africa (Bates, 2005, Berry, 1997, Peters, 2004) as well as in other parts of the world (Tendler, 1997, Li, 1999).

This paper has presented a counternarrative to the framing of rural problems, and the policies seeking to modernise rural Rwanda: rural populations are diverse and so therefore are the effects of policy on those people. Those people are not simply degraders of the environment but complex and adaptive social beings, whose livelihood activities and intertwined cultural practices have developed over centuries and who value their freedom to maintain those practices and associated social interactions. In Rwanda, strategies which build on existing and traditional strengths and are well matched to the labour rich situation and existing markets may be most likely to have pro-poor outcomes. Pro-poor agricultural growth is generally only achieved in specific cases, where local views are included or even drive the changes and where governance allows learning (Djurfeldt, 2011, Tendler, 1997). Some have called for the pathway towards sustainable livelihoods and resilient rural populations to be one of smallholder productivity increase, to utilise the traditionally fragmented land ownership, multi-cropping systems and traditional knowledge to power a green revolution in sub-Saharan Africa (WB, 2008). Rwandan farmers have been shown to possess detailed knowledge of soil types (Steiner, 1998) and are able to use their knowledge and adapt to new crop types and economic opportunities quickly (Rutunga et al., 2007). It has also been argued that the high internal demand for food and large labour force dictate that only the agricultural sector can provide the basis of growth and poverty reduction in Rwanda (Dercon, 2009). Although some authors optimistically envisage the next generation of sub-Saharan Africans finding sufficient work opportunities in services and industry (Barrett and Carter, 2012), this appears unlikely for the rural areas in this study, even the most well connected site, and their wellbeing is likely to be closely linked to local land use for the foreseeable future. Therefore, although intervention may well be necessary to maintain and improve the quality of life in rural Rwanda, measures which enhance traditional agriculture, promote active participation, utilise inventive forms of tenure and cooperation (none of which preclude improvements to market linkages and infrastructure) are most likely to have positive outcomes for rural smallholders, and importantly, for those who have become landless in recent years.

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6. CONCLUSION

This study applied a multidimensional definition of wellbeing to household level research in rural Rwanda. By applying a relatively holistic approach to the study of rural wellbeing rather than the quantitative, materially-focused indicators often relied upon, the results illustrate empirically some of the complexities in the lives of rural inhabitants, beyond material elements to include subjective and social factors.

An existing conceptualisation of wellbeing was applied to several different fields and combined, or contrasted with other widely used theories and concepts, thereby broadening the scope for wellbeing research. The rich qualitative data generated, supported by some quantitative analyses, provide relevant insights for the design, implementation and assessment of interventions aiming to improve the lives of rural inhabitants in developing countries, in the fields of both development and natural resource management.

Development initiatives in Rwanda have been extensive in recent years and their impacts on rural Rwandans have been highly contested. Therefore, alongside its contribution to the study of complex rural contexts and the development of wellbeing research, this study also aimed to assess and clarify some of the impacts of development policies in Rwanda.

6.1 Structure of the concluding section

This concluding section is organised in the following sequence: firstly the results and conclusions of the methodology and each of the data papers are synthesized. The implications for policy in Rwanda and beyond are then summarised, followed by a discussion of methodological implications. I then explore the relevance of this research project to existing literature and the contributions the findings make to different theories, approaches and frameworks. Lastly the limitations to the results and potential alternative or complementary avenues of study are considered.

6.2 Summary of results

In this section the key results from each of the papers presented in this thesis are revisited.

6.2.1 From capability approach to practical research: a comparison of sustainable livelihoods and wellbeing in developing countries approaches

The limited ability of the dominant methodological approaches in development to adequately interpret complex contexts in developing countries has been recognised by development practitioners. This research gap created great appeal among development organisations, for new tools to provide a bottom-up perspective of rural context (Kaag, 2004). In this paper two research approaches addressing this problem were described and compared with reference to their application in rural Rwanda: the sustainable livelihoods framework (SLF), and the methodology adopted in this thesis, the wellbeing in developing countries approach (WDC). While both of these have foundations in the capability approach (Sen, 1999), the application of SLF or WDC approaches is far from arbitrary and considerable differences exist between them and the likely results which may stem from their use.

The SLF approach has provided an easily-applicable and fairly standardised tool for rural development research. However, research utilising the sustainable livelihoods framework has fallen short of interpreting local perspectives and, in its' application, it has been used as a framework to quickly, deductively and relatively objectively, provide sufficient evidence to adopt certain courses of action. It has therefore represented an expanded version of its predecessor, participatory rural appraisal and is subject to many of the same criticisms (De Sardan, 2005a, Du Toit, 2005). Rather than exploring the variation in perspectives within a setting, "*participatory research can hide diversity and present a falsely homogenous view of the 'community' it is studying*," (Gough, 2004, 294).

SLF research has tended to focus on material dimensions of wellbeing in the form of the capitals people have, the way that institutions mediate access to those capitals and the general strategies employed by rural people. The WDC approach has rather more holistic objectives, seeking to understand the ways in which people themselves conceptualise wellbeing and the interrelated material, subjective and relational factors which combine to facilitate or restrict a person's ability to meet basic needs and their own further goals. The attention paid to these subjective and relational aspects represents an ontological difference between the approaches which results in quite different methodological application, making in-depth qualitative study an essential component of the approach, one which is

often subordinated to methods enabling ease of classification along more deterministic lines in the SLF approach. That multidimensional wellbeing definition provides additional insights, beyond the scope of the SLF, into the influence of social relations and relative power between groups and institutions on the outcomes which people may or may not achieve. The relevance of data concerning subjective and relational dimensions of wellbeing in addition to material aspects is further illustrated in section 3 of this thesis. But as the application of the two approaches to the Rwandan case studies reveals, the SLF focuses strongly on the institutional setting which may enable economic development to take place within communities as a whole, in the context of broad-scale changes occurring. The WDC approach provides a greater understanding of the extent of poverty occurring in an area, the intricate reasons for its reproduction among different individuals and groups and the factors and changes which may enable people to improve their wellbeing.

While literature outlining the WDC approach highlights the influence of multiple disciplines from political science to psychology and anthropology, and encourages the use of mixed methods, both quantitative and qualitative, in its application, few of the concepts put forward can be objectively defined. Basic human needs are considered to be relatively consistent across individuals based on the Theory of Human Need (Doyal and Gough, 1991) and represent a notable exception. But the inductive nature of study required to research wellbeing as a whole leaves the actual methods to be utilised and theories to be applied unspecified. Those specifics depend very much upon the context, the focus of the research and the researcher him or herself. Therefore WDC studies are much less standardised and far more researcher-driven than research applying the SLF. But results may be more surprising and reveal some of the complexity of lives in developing country contexts and the additional scope the approach affords may have very valuable implications for the type of development interventions considered and the way in which development impacts are assessed.

6.2.2 The influence of cultural difference, relative power and discourse in reproducing outcomes in rural Rwanda

This paper explored the importance of subjective and relational dimensions of wellbeing to different people in rural Rwanda. In exploring differences between people and their subjective and relational wellbeing at the household level, the wellbeing framework was integrated with the concepts of dispositions and habitus from Bourdieu's theory of social practice (Bourdieu, 1977) and also with a multi-layered concept of power (Lukes, 2005).

One of the major themes drawn from the data collected about wellbeing in the three rural areas in this study was not only the economic difference between people but also the social, political and sometimes spatial separation between people of different backgrounds, particularly their origin and history. By exploring these aspects the paper illustrates the processes by which outcomes, including chronic poverty, and difference may be reproduced within the rural population. In Rwanda, people's identities may be crudely equated with ethnic grouping but is actually more nuanced than the labels Tutsi, Hutu or Twa would allow for. The identities associated with the main ethnic groupings are neither consistent for different individuals, nor always the strongest indicator of the cultural feelings and practices of an individual as region, class, gender, history, migration, environment and occupation may play a part (Purdekova, 2008). A reconciliation policy in Rwanda has sought to eliminate ethnic difference and even use of the terms in everyday life may be met with punishment. In their place ethnic relabeling has been enacted by the government to promote the idea and application of a singular type of Rwandan citizen over divisive ethnic groupings. The image of the Rwandan citizen is closely tied to development discourse and is strongly promoted through government information campaigns. This study did not aim to criticise the complex reconciliation process at work in Rwanda which requires a detailed understanding of ethnic relations, past events and is best understood by Rwandans themselves. Instead the analysis aims to understand what variation exists in rural Rwanda, to provide some greater detail to the generalisations and common myths about types of Rwandans and to explore the means by which the new vision for Rwanda, the development discourse and policies impact on the wellbeing of different types of individuals.

Clear differences in the ways of thinking and acting between groups were identified. Both past experience and class intersected to influence the outcomes people were able to achieve. The impacts of power in its coercive, agenda-setting and discursive forms had a great impact on the historical and present wellbeing of socio-cultural groups identified. Returnees from the Democratic Republic of Congo (DRC) had, on average, been able to gain access to and accumulate more land, livestock and attain higher occupations with only rare exceptions being dependent on agricultural labour. A minority of long-term residents, depending on their past circumstances and ability to participate opportunistically in projects had also been able to attain such an elite position. Yet the majority of long-term residents in the sample struggled to meet basic needs and were largely dependent on agriculture, both through subsistence and labour. The wellbeing of the Twa was particularly influenced by their separate history, cultural practices and their relative position in society, especially since removal from forest habitats had resulted in repeated dispositions and outcomes. The cultural knowledge of the Twa and social systems surrounding their forest-based subsistence lifestyle had been broken by their removal from the forest. Their existence in the forest had changed due to population pressures, particularly in the aftermath of the genocide as refugees were resettled in forest areas and large-scale conversion of forest to agricultural land took place. Although relations with other ethnic groups were perceived to have improved they were still viewed with some prejudices and excluded from any higher paid roles, even from working in tea plantations.

The ubiquitous message of what a Rwandan citizen should be was far removed from the reality of most people's lives. Only a minority were able to adapt their ways of acting to conform to the new vision put forward for them. This does not represent a gradual acculturation but a much more engineered future identity (Reyntjens, 2011b). People's perspectives on these changes differed strongly with large proportions of people lamenting the changes in the way people interact in villages, the absence of traditional gatherings, produce and goods. For people unable to live up to the vision of a Rwandan citizen, such as respondents unable to afford soap, school materials for their children or the large proportion of people unable to buy medical insurance, let alone to invest in new agricultural technologies, this serves to emphasize difference and may generate a loss of dignity

representing a process of marginalisation of the poor. In contrast others poured derision on the ways in which people used to act: not seeking to accumulate wealth, not wearing shoes, building grass rooves, using local materials for items like plates in place of modern alternatives. These changes are very recent yet have been cast into history, particularly by younger and wealthier Rwandans. While travelling between sites by a new ferry route along Lake Kivu, grass rooves or 'nyakatsi' were visible on the Congolese islands we passed and Rwandan passengers 'tutted', shook their heads and visibly and audibly displayed their disapproval. Yet only in 2010 grass rooves were a very common sight in rural areas in Rwanda too.

The analysis of relational and subjective elements of wellbeing also serves to add context and individuality to people's lives and provides a counternarrative to some common myths about the three main ethnic groups within Rwanda. The Tutsi, in this case returnees from DRC do not always form the elite and Hutu or long-term residents may equally occupy this role. And a person belonging to any one of those groups may display agency which varies greatly from the expected or from the average position. This is frequently overlooked in development studies, particularly those generalising about 'the poor' (Ibrahim and Alkire, 2007). Individuals from each of the groups had escaped poverty and were able to overcome obstacles in their place to achieve improved outcomes for their household. And likewise individuals from each of those groups suffered from a lack of aspirations and found themselves struggling to meet basic needs on a daily basis. Once a household suffered from poverty it inhibited their ability to plan, to take risk and change their lives as much as the relative position of their ethnicity.

6.2.3 Assessing the contribution of ecosystem services to human wellbeing: beyond monetary values

The paper presented in section four sought to locate the importance of the ways in which people benefit from natural resources, or ecosystem services in their wider wellbeing. There has been increasing interest in the concept of ecosystem services and the pathways by which they contribute to human wellbeing, but work has been conceptually weak and empirically almost non-existent. Here a framework was presented combining ecosystem services and wellbeing and the framework was applied in rural Rwanda. This analysis sought to provide a basis for future studies of the relationship

between ecosystem services and wellbeing in a holistic way and the framework was applied to illustrate those complex relationships.

As with previous conceptual studies of ecosystem services, I found that a multidimensional definition of wellbeing considering local context as well as social relations, political and cultural aspects is necessary to adequately describe motivations and behaviour regarding ecosystem services (MA, 2005). Material needs and goals played a part in demand for ecosystem services, but were not comprehensive. The ways in which people seek to utilise land and natural resources differs depending on their histories, experience, knowledge and cultural identity. Cultural services, the subjective cultural ways in which ecosystems are valued, were not simply related to spiritual and other non-consumptive practices, but were closely linked to land use and to other provisioning services. The consideration not only of local perspectives but also of the relative power of different stakeholders and degree to which their values are recognised in decision making processes provides scope for ecosystem service studies to reconcile the needs of local stakeholders with the objectives commonly prioritised in natural resource management and particularly through biodiversity conservation.

In Rwanda, policies governing land use had a major effect on the autonomy of rural inhabitants, the activities they can engage in and in their ability to take advantage of or benefit from ecosystem services. Policies regulating farming practices as well as habitat protection impacted the ways in which people demanded and were able to benefit from ecosystem services. Agricultural policy greatly altered land use among a large proportion of the rural population. Policies governing habitat protection had severe consequences for particular individuals and groups. The Twa were particularly adversely affected by forest conservation policies as the livelihoods and homes for many were closely tied to specific areas of native forest and specific forest resources. Their cultural and economic links to forests were seen to be rapidly diminishing and receive little recognition as their difference and uniqueness is overlooked as they become part of the homogenised subject of development. No tenure over forest areas has ever been recognised for them in Rwanda (Lewis, 2006).

Essential to the understanding of the way in which natural resources contribute to human wellbeing is to consider landscapes as multi-functional

from the perspective of people living within them rather than from the perhaps narrower perspective of conservation agencies and those who place wilderness and accommodation of associated megafauna as its main function. This consideration of agricultural habitats, wetlands and non-native forest in the analysis revealed that the major ecosystem services (provisioning, regulating and cultural) demanded and valued by surrounding populations were not dependent upon tropical rainforest, but could be provided by a mosaic of habitats in the landscape. Access to natural resources was vital to the wellbeing of rural inhabitants but they were accessed not primarily from tropical rainforest, but alternative habitats found in the immediate landscape. This included the ecosystem services which contributed most to the ability of poor people to meet their basic needs, which suggests that even the poorest households were not dependent on tropical forests. Indeed the major contribution of tropical forest to the wellbeing of rural inhabitants was through a singular regulating service, climate regulation: the provision of conditions amenable to good health and possibilities for crop growing. Even then this service was not perceived to depend upon intact or primary forest, or even native forest.

6.2.4 Agrarian change and the wellbeing of the rural poor: from theory to complex realities

The final empirical paper in this thesis considered the different framings applied to the changes and their drivers affecting rural Rwandans. The complex, multidimensional, local perspective of wellbeing was utilised to comprehend the types of changes affecting rural areas and how they impacted households differentially. This understanding was then applied to the dominant policy framings, narratives and actual strategies employed in the agricultural sector to detail their impacts on rural Rwandans and their interaction with wider development goals.

In Rwanda the crisis narrative of Mathusian land scarcity was clear in the National Land Policy introduced in 2005 (ROR, 2004). National scale figures have shown dramatic trends in population increase, reduced average land holdings and associated reduction in food production per capita (NISR, 2010, Ansoms et al., 2008). However a household level analysis of processes occurring revealed much more complex changes at work influencing people’s wellbeing. There were numerous changes occurring for rural households, beyond those affecting land sizes and soil health. Already faced with reduced soil fertility, the life of a Rwandan

villager has been further pressured by increased costs of services, sporadically elevated food prices due to increasing environmental variation and reduced access to natural resources to meet basic needs. There were of course a number of other changes occurring in people's lives, affecting a minority of people, including health issues, crop disease, conflict within and between households and local level corruption. Based on the different issues affecting rural Rwandans, the pressure on smallholders to produce sufficient food and to generate income simply to be able to maintain their assets is great.

The analysis reveals that agricultural and development policies actually exacerbate hardship and reduce the wellbeing of a large proportion of the population, rather than improving their lives. Reduction of the problem to a simple issue of land scarcity and deterioration serves to ignore many of the issues with which households are faced. The Malthusian framing of rural problems decontextualizes the wellbeing of rural populations, overlooks the trends and shocks impacting their lives and removes their interests from policy debates. The framing of the problems facing the agricultural sector around land scarcity effectively justified a state-led policy solution of intensification, increasing yields through improved technologies to meet the demand of a growing population. The solution involved a highly centralised management of land throughout the country, focusing on six key crops alongside cash crops such as tea to contribute to economic growth and national scale food security. Tenure was also given greater definition through the Land Policy with formal land registration completed in a nationwide exercise. However farmers were only granted long-term and cancellable leasehold with the government's role as the ultimate owner reinforced. Despite effective registration to prevent land conflict, control of land by individuals was therefore often reduced rather than increased, such that people could be evicted from land for not adhering to rules about how that land should be managed (Ansoms, 2011, Huggins, 2009).

The market-led, input driven growth required to adhere to the crop specialisation policy could only be followed by a minority of the rural households in this study. The stringent rules for specialising in particular crops designated for an area requires investment in inputs, either fertilisers or labour. Those investments and the timing of returns from monocropping leave poorer households with uncertainty over income, food production and future tenure. The policy therefore accelerates the redistribution of land

already evident from poor to wealthier households. The overall, general effect was that the population is being polarised and the productive assets of land and livestock are being transferred into the hands of wealthier households, while those with little find themselves a) having to come to terms with their inability to live up to the required standard set by development initiatives and discourse (which could be considered a form of structural violence) and b) suffering negative material consequences, the need to relinquish assets caused by increased tenure uncertainty and greater living costs, with more relatively poor households becoming landless and dependent upon available labouring opportunities. In Rwanda the Malthusian narrative is therefore becoming reality for many, due perversely to policies considered to promote development.

Although the traditional systems of agriculture may require support through policy intervention, the crop specialisation policy has had and is having dramatic effects on rural practices and interventions which overlook the strengths and rational behind the evolution of local farming practises may fail to improve the wellbeing of rural populations. The effects of implemented policies were not limited to the types of crops produced or the material outcomes from farming for trade and subsistence. The nonmaterial functionings, complex knowledge systems, trade, and associated interactions which were intricately linked to traditional polyculture systems have been severely affected. Dozens of crop types produced in rural areas previously varied over very small scales dependent on soils and environmental conditions (NISR, 2010). Transport and trade of crops in numerous directions based on micro-ecological gradients were therefore conspicuous daily activities. Labour transactions also followed these micro-scale differences in production as multiple overlapping crop cycles created sporadic but extended opportunities. The implemented policy of crop specialisation reduces ecological complexity to large-scale administrative borders and therefore trade, labour patterns and associated interactions must all follow suit. In the absence of adequate means to address the impacts of this recently implemented policy, the consequences are likely to escalate.

6.3 Implications for policy

6.3.1 Development trends in rural Rwanda

Through the data papers presented, Rwanda has been established as a very intriguing example to use for the analysis of multidimensional wellbeing and of the impacts of development policies upon it. Life for rural Rwandans has changed substantially since the mid-1990s, and has improved in many ways, particularly through increased physical and economic security and better provision of health and education services to rural areas. On the basis of economic growth achieved Rwanda aims to become a middle-income economy by 2020 (UNDP, 2007), representing a huge turnaround within fifteen to twenty years and by meeting targets in the reduction of poverty indicators Rwanda has been hailed as a global leader (UN, 2013).

Yet while national scale measurements reveal large decreases in income poverty (NISR, 2012), more context driven definitions of poverty may show quite dramatically contrasting patterns in the wellbeing of rural inhabitants. This study revealed the proportion of households unable to meet basic needs to be high and increasing. The group identified as landless labourers represented 34% of the study sample and bore striking resemblance to rural Rwandans identified as chronically poor in previous studies (Howe and McKay, 2007).

There were high and increasing levels of inequality within the sample population in this study. A small proportion of individuals in this study held most of the wealth with 13% of households owning 53% of the land. This gap was widening and also accelerating due to the differential ability of people to participate in activities regulated by policies and the tenure uncertainty created over land, trades and property. Indicators of inequality show Rwanda to be among the least equal countries and the Gini coefficient has consistently been above 0.5 since 2000 (http://data.worldbank.org/indicator/SI.POV.GINI, accessed 9th July 2013). Differential access to sources of nonfarm income can widen the gap between households of different types and this can be pronounced for gender too (Berry, 2002). The wide and increasing gap between poor and non-poor was not only evident but strongly perceived to exist and to represent a barrier between groups of people.

Many of the development policies introduced in Rwanda have been deemed successes, but while their effects certainly had a transformative effect on the lives of rural inhabitants, aiming to alter the ways in which they both think and act, many of those impacts are perceived to be negative by rural Rwandans, especially for relatively poor people. Results of this study suggest that policies, considered to target development, actually discriminate against cultural practices and leave many rural households materially poorer and with greater uncertainty over their assets. Unfortunately this finding is not novel in development, but instead is representative of a persistent limitation in development effectiveness (Scott, 1998, Mitchell, 2002, Mosse, 2004). Many achievements have been made in sub-Saharan Africa through development interventions. Progress towards poverty alleviation targets enshrined in the Millenium Development Goals (MDGs) is a notable example. However these measurable targets are a case in point: Even trends in those indicators purporting to represent the poverty of many millions of people may not match poor people's own perceptions of trends in their wellbeing because the methods by which development goals are pursued, the other objectives, values and privileged knowledge contained within policy design and in the way those policies are implemented and assessed have a great impact on the outcomes they may achieve. Poverty alleviation goals have often, and in recent years increasingly, been subordinated to economic goals in sub-Saharan Africa (Hickey, 2013). And such outcomes may not be well represented by the limited, broad-scale targets on which development policies, and nations are judged. While some of the improving indicators from MDGs were mirrored in the empirical data from this study regarding health and education, this trend was not indicative of the overwhelmingly perceived downward trend in the wellbeing of the rural population in this study. It appears that other factors, not adequately represented in national scale indicators played a significant role and the coercive and financially burdensome method by which policies promoting housing improvements and villagisation were followed (UNPO, 2011, Newbury, 2011) led few to perceive that their lives had been improved as a result. While many respondents in research may report their own wellbeing to be decreasing, the negative trend was strongly supported by the accompanying quantitative analyses presented in this mixed methods study. It is therefore important, alongside such large-scale, standard and objective development indicators, to incorporate fine-scale, qualitative or mixed methods research to elaborate the needs, perspectives

of and variation within populations of people whose lives policies seek to transform. Rwanda has set very ambitious targets up to 2020, for example the villagisation of the entire rural population (UNDP, 2007) and future research may usefully consider the processes involved in these policies and local perspectives on their impacts. From the insights presented in this study, characteristics of pro-poor policies are more likely to be the promotion of increased tenure certainty over land and housing, reduced financial burdens associated with development and to support skills and strengths within local communities including traditional practices and abundance of labour.

In addition to decreases in material wellbeing for many, related social and cultural aspects of wellbeing also appeared to be declining. As the insights provided through application of multidimensional wellbeing applied here demonstrate, rural Rwandans' goals and ways of acting, although they do vary by individual and group, have developed with cultural knowledge, practices and associated social relations. The contrast between goals of material accumulation, modernisation and rural practices in Rwanda were described in detail in de Lame's (2005) ethnography of life on one hillside in the early 1990s. But the policies initiated post-1994 and associated discourse effectively prohibits these ways of thinking and acting in favour of modernisation and associated technical solutions. The simplification of problems and decontextualisation of people in the framing of policy results in unrealised benefits and often costs for intended recipients. The household-scale, mixed methods approach taken revealed the importance not only of material wellbeing but of relational and subjective factors, a depth of understanding seldom acknowledged in the design and impact evaluation of policies and projects.

The SLF approach represents a useful tool for identifying different entry points for development policy, particularly through identification of lacking productive assets or institutional barriers to livelihood diversification (Ellis, 2000). The WDC approach represents a broader approach which pays greater attention to basic needs, to cultural difference and to issues of recognition and power which may hinder the empowerment and development of certain groups. In the Rwandan example, where policy is highly centralised and civil society so sparse, the WDC approach and other similar research methodologies which could be used to address the lack of policy monitoring may give more relevant detail on lacking local

perspectives. Through this study application of the WDC approach has given emphasis to specific unmet basic needs which hinder development, but also to the strengths and knowledge which are associated with subjective ways of thinking and acting, to issues which prevent the meeting of subjective goals and also to marginalised groups and those adversely affected by power relations.

Improved research provides an inadequate substitute for inclusive participation in policy processes. Very centralised, far-reaching and pervasive policies have been implemented in many areas of people's lives in Rwanda (Beswick, 2010). While a façade of participation may exist, it is a constructed one. Many of the villagers in this study did not perceive ability, or for many, even entitlement to contribute. While places where meetings take place do exist, the spaces for participation do not (Purdeková, 2012). The potential impacts of implemented policies are great, yet there is scant regard for monitoring and evaluation to record the ways in which people's lives are affected beyond limited indicators based on policy objectives (Holvoet and Rombouts, 2008). Participation, when conducted inclusively through attention to the types of spaces which encourage input from different actors (Cornwall and Coelho, 2007) is presented by Alkire (Alkire, 2002) to have four potential benefits in a developing country context: it may empower people, provide greater understanding of local complexities and perspectives, can enable people to learn from each other through the process and finally also enables a reflection on cultural identity, which may allow for beliefs and values considered outside of the mainstream to be legitimately integrated into the accepted cultural values of a community. These features were largely absent from the rural communities in this study and the policies affecting their lives.

Rwanda has been the subject of international interest and a recipient of large amounts of international aid (IMF, 2011). Although the international influence on the extent of development and ways in which development objectives are set and pursued in Rwanda are considerable, the Rwandan government itself has exhibited substantial resistance for example to democratisation, and control over the establishment of development policy, with much aid being directed towards 'budget support' rather than for specific aims (Uvin, 2010, Hayman, 2011). Therefore, although many studies consider development to represent a strategy based upon western values, imposed through coercion upon subjects in developing countries

(Kidd, 2008, Escobar, 2011), the relationships between developed countries and African states tend to be much more nuanced than this assumption would allow and are based upon a number of historical and political factors (Bayart, 1993). The balance of power in determining and implementing development strategies is not the focus of this study, but it is important to consider when interpreting the results presented that development in Rwanda, in terms of the economy, poverty alleviation, conservation and agriculture, is not entirely governed by the World Bank or by western values, interests and objectives, but also by domestic actors, the dominant one in Rwanda being the central government. Donors could have a stronger influence on the way in which development is conducted and the important processes by which targets are pursued.

I recognise the picture painted in this thesis about processes of development in rural Rwanda is not always a positive one. Yet those themes are supported quite clearly through the data presented. As the initial basis for this thesis was to provide an understanding of the contribution of natural resources to the wellbeing of rural Rwandans, I had no prior agenda. I would have been equally prepared to interpret the perceptions of local residents in describing the positive, transformative effects of development and land management policies and to present examples of good practice.

6.3.2 Policy implications of social and cultural difference

Different social and cultural practices were important elements of people's wellbeing and were closely tied to land use, particularly farming practices but also use of non-agricultural habitats. Great variation was encountered in material wellbeing, but also in cultural practices and the relative position of different cultural groups. In restricting freedoms and homogenising development subjects, the eradication of social and cultural difference may result in unequal treatment and outcomes for the elite or marginalised, or cultural groups with different relative power (Williams, 1995). The uniform implementation of development policy and ignorance of diversity in the population, may actually serve to emphasize difference and to cause reproduced outcomes, for some of continued poverty (Cleaver, 2005). In the Rwandan case, recognition of the difference in groups is critical to, firstly the establishment of development objectives more meaningful to the heterogeneous 'beneficiaries' and secondly to overcome difference in their

impacts, to find ways to overcome the reproduced outcomes which result from ignorance of those attributes.

Those differences had important consequences for the impacts of policies in development and natural resource management upon the different groups. These important aspects of people's lives are frequently treated as being outside of the scope of development policy, which subordinates them to the achievement of development targets such as reduction in the objectively measurable aspects of poverty. The targets that are used to represent development are pursued at the cost of personal freedoms and cultural difference and those who do not comply with envisioned 'developed' citizens are labelled and termed as backward or in need of modernisation to justify that process. However development is not only encapsulated in a number. The processes by which development targets are met have considerable influence on the lives of the people whose wellbeing is effectively reduced to that small fraction of a target percentage. This raises interesting questions about the means and ends of development, with particular relevance to the choices made by donor countries and large development institutions about what types of development to support: that which meets targets or that which supports freedoms. This question is considered in Sen's comparison of China and India (Sen, 1987). In China freedoms are essentially sacrificed in the pursuit of envisioned progress, yet in India, development progress has not materialised to the same extent despite the greater freedoms afforded to citizens.

While some authors have noted the potential of collective agency among rural populations to both maintain, protect, strengthen and even popularise their cultural identity in other parts of the world (Hecht, 2010), that ability to negotiate cultural meaning seems far removed from rural Rwandans. The difference may lie in the political space available and role of civil society groups. And while many authors may argue that the imposition of development goals is effectively coercion on the part of donors, western powers, former colonial powers and the longevity of their influence through establishment of new classes of Africans (Hagmann and Péclard, 2010), in the Rwandan case particularly the role of the RPF government and its leader Paul Kagame in setting and pursuing its own objectives should not be underestimated (Huggins, 2009, Reyntjens, 2011a).

6.3.3. Policy implications for natural resource management

While conservation has historically focused on strictly protected areas, the lack of long-term success achieved through excluding local people and the potential harm of introducing newly protected areas have led to an understanding that ecological and social objectives are interrelated and conservation objectives have therefore become more aligned with those of development (Mascia et al., 2003, Lele et al., 2010). Recognition of the interconnection between natural resources and human wellbeing has led to calls for interventions which promote favourable environmental outcomes at the same time as realising social and economic benefits (MA, 2005). However, although evidence shows that interventions can achieve multiple goals, such as poverty reduction through enhanced ecosystem services (Dudley et al., 2010), programs initiated with joint environmental and social aims have tended to greatly oversimplify the task (Agrawal and Redford, 2006) by assuming win-win scenarios when experience has shown relationships between social and ecological systems are very complex and that a trade-off is a far more likely outcome (McShane et al., 2011, Hutton and Adams, 2007, Corbera, 2012). Recognition of this trade-off is important because conservation interventions which fail to recognise or limit their impacts can result in negative wellbeing effects for some of the poorest people on the planet (Fox et al., 2009, Kosoy and Corbera, 2010, Pascual and Barbier, 2007, Boerner et al., 2007). Although poor households may stand to gain the most from conservation interventions, benefits have instead been conferred to other stakeholders, particularly wealthier and western stakeholders (Fearnside, 2003), and elite capture of any local benefits has limited the contribution to local poverty alleviation (Blom et al., 2010, Jumbe and Angelsen, 2006). The relative power of different stakeholders inevitably plays a role in the outcomes of trade off decisions and the knowledge of more powerful actors is often privileged through the technical solutions sought and the biological and economic information utilised to support them (Brockington and Duffy, 2010).

Much ecosystem services work has developed to focus on monetary valuation of natural resources and in doing so has essentially repeated past, simplistic strategies for the protection of natural resources (Spash, 2008, Corbera et al., 2007). The reduction of complex relationships and values for natural resources to economic indicators overlooks the non-material elements of these relationships and also the critical importance of

certain natural resources to the basic needs and therefore daily survival of a proportion of poor, local users (Gómez-Baggethun et al., 2010, Norgaard, 2010).

This study revealed that natural resources played an important part in the wellbeing of rural Rwandans. Few could provide those resources from their own land and the majority relied instead on surrounding habitats to provide their material and non-material requirements. However, few ecosystem services, particularly those linked to basic needs, were dependent upon native forest habitats and instead connected to the variety of other habitats found in the wider landscape: wetlands, non-native forests, agricultural habitats and scrubland. Other studies have also found that non-forest products may be more important to wellbeing of the poor than forest products, especially where access to forests is unfavourable (Pouliot and Treue, 2012). Yet because they too were often subject to increasingly restricted access or were being converted to settlements or agricultural land, the relative need and risk associated with illegal forest uses also represents an important future threat. This is particularly the case because few people could afford modern alternatives to the ecosystem services provided, such as charcoal, gas, bricks for construction and to a lesser extent even modern medicines.

The importance of habitats other than native forest within the landscape presents a strong opportunity for the conservation of natural resources and biodiversity in Rwanda. The fact that natural resources might play an important role in the wellbeing of local populations suggests that changes in the provision of and access to ecosystem services may play an important role in substantially improving the lives of rural inhabitants, and in alleviating poverty (Martin et al., 2010). And by legitimising use of provisioning services and directing it to areas outside of the core primary forest a win-win situation may be achieved through improved protection of primary forest. Uses currently deemed illegal could then be legitimately joined with value chains to maximise benefit to local communities. But the trend towards privatisation of large areas of land in Rwanda, including habitats adjacent to protected areas (Gross-Camp et al., in prep.) creates urgency for an approach to be taken to land use planning which includes rather than removes the needs of local populations from decision making processes. Landscape approaches to conservation which incorporate mixed use zones and delineate responsibilities, rules and uses across

habitats and areas have become popular alternatives to strictly protected areas in recent years, which is gradually becoming aligned with wider land use planning (Crossman and Bryan, 2009, de Groot et al., 2010, Hartter, 2010, Nelson et al., 2009, O'Farrell and Anderson, 2010). Although long-term solutions to illegal extractive practices such as mining or hunting may also involve education, retraining and development of other more varied rural employment opportunities, they may be pursued alongside a more inclusive conservation. Although alternative jobs to agricultural labouring are available, they are largely seasonal and remain poorly paid with few rights and the lack of permanent substitutes for mining work in that area, beyond tea labouring (which earns approximately £0.70 per day), may be a factor in the persistence of illegal mining in Nyungwe National Park.

Self-regulation or stakeholder involvement in management of forests and wider habitats can more effectively align land management with the diverse needs of local stakeholders (Lele et al., 2010, Armitage et al., 2009, Wollenberg et al., 2007). A community based management approach is inconsistent with the highly centralised nature of government policies in Rwanda. Masozera and Avalpati (2006) revealed that communities around Nyungwe believed community based forest management could bring positives that would outweigh negatives, but this was in contrast to opinions expressed by a government agency and nongovernmental organization. However this does not negate the possibility of attempting alternatives to exclusion zones and taking landscape approaches to conservation which formalise tenure over areas under reforestation, wetlands and non-native forests, some of which are still relatively abundant in rural Rwanda. Currently many such habitats are used extensively by local populations at risk of punishment, with very limited formal access.

In both Nyungwe NP and Gishwati Forest, opportunities to designate mixed use areas exist, through the substantial area of buffer zone in Nyungwe NP and areas allocated to reforestation schemes in Gishwati Forest, in addition to large areas of publicly managed non-native forests and wetlands in the surrounding landscape. Using the type of fine-scale understanding generated through the integration of social and ecological research, ecosystem services could be matched to the needs of the local population in ways which are sensitive to the cultural resources present. This could be especially important for Twa, a marginalised group who have particularly low levels of wellbeing, agency and whose culture is suffering due to

conservation policy (Beswick, 2011). Their own cultural identity (for the majority of Twa in this study) was strongly connected to uses of native forest. However provision of livelihood opportunities from legitimised forest activities would not necessarily threaten forest conservation and may indeed reduce the high levels of illegal hunting which still occur in Nyungwe Forest (Mulindahabi and Ndikubwimana, 2010). And they maintain, with some supporting evidence, that their own forest uses did not result in ecosystem degradation. That resulted from large-scale government projects, activities such as mining, allocation of land to refugees and during times of instability (Hill et al., 2002).

6.3.4 Policy implications for agricultural development

The agricultural sector is closely tied to the wellbeing of rural populations. Agricultural policy framings, narratives and strategies have been reproduced and repeated many times in sub-Saharan Africa, as far back as the 1970s (Peters, 2009, Roe, 1999), as discussed in section 5. The similarity of past policies implemented in sub-Saharan Africa with those being currently introduced in Rwanda is quite remarkable, particularly in terms of their pursuit of crop-specialisation to increase production of easily marketable and exportable goods, including cash crops to maximise the contribution of the agricultural sector towards the growth of the national economy (Peters, 2009).The common, consistent message spread by the Rwandan government to smallholders is "*You are blessed with fertile land and reasonable rainfall. It is, thus, upon you to make money in agricultural production. The level of crop production we see here doesn't reflect your potential*," (Senate vice-president Jeanne d'Arc Gakuba quoted in The New Times of Rwanda, 29th April 2013).

The successful design of policy strategies for agriculture in developing countries requires attention to fine scale context, including the cultural and political factors interrelated with the economic activity of peasants (Berry, 2002). Yet instead simplistic theories of agrarian change support commonly pursued strategies (Rosegrant and Cline, 2003, Roe, 1999). Indeed many of the points made through this thesis could be supported by both scientific understanding and suitable examples prior to 1990. In past examples, from across sub-Saharan Africa, such policies served to contribute to national economic goals and increased the wealth of some farmers, but they were not considered successes in reducing poverty, or the vulnerability of rural

populations to hunger (Bates, 2005, Berry, 1993). Some of the factors which prevent development from achieving its now ambitious goals have persisted for many years.

In other parts of the world, agricultural policy has proven to alleviate poverty and transform the lives of rural populations in positive ways, and key factors in the success of those policies were the attention to smallholders' needs and adaptation to local context (Birner and Resnick, 2010, Van Donge et al., 2012). But there is little evidence that pursuit of agricultural growth results in poverty alleviation regardless of the methods by which it is sought (Haggblade et al., Dercon, 2009, Bigsten and Fosu, 2004). The actual processes by which growth is sought, the practical implementation of policy and the multitude of pathways through which people's lives are impacted, including the impact on individual freedoms, determine those outcomes.

The Land Policy and other development policies implemented fail to address the issues with which rural populations are faced, or at the very least fail to align solutions with the needs of local populations. Instead the Malthusian framing has resulted in a securitisation of the environmental problem, providing a justification for radical, centrally imposed solutions. The radical solutions to Rwanda's agricultural problems are largely aimed at modernisation and monetisation of rural populations. Instead of providing incentives or economic assistance to people, the implemented policies have quite perversely increased the uncertainty and financial burdens upon rural families. Furthermore, the reduction of access to natural resources, particularly in forest-adjacent communities left many squeezed between a forest they could not utilise and farm land they could not grow their food on. Agricultural extensification has occurred in recent years in Rwanda, though much of this land, in forests, wetlands or previously unutilised public land has been appropriated by private companies or relatively wealthy individuals (Nabahungu and Visser, 2011, Ansoms, 2009, Gross-Camp et al., in prep.). Already the risk involved in making investments has increased and the ability of many to maintain their livestock or land holdings has diminished. For those living close to a poverty threshold, as many in rural Rwanda do, certainty is extremely important for people to take any form of risk as many would seek to maintain their assets rather than risk falling into poverty (Wood, 2003).

Rwanda's agricultural transformation is being hailed as a successful one. However claims of greater resilience and increased food security are made simply on increases in national production of a handful of approved crop types. The reality from the perspective of rural areas is quite different. The many crop types previously produced and poorly measured are ignored, as are their importance to household subsistence, local food security and social and economic systems. Food security is a contested term, often very weakly defined and which, if aligned with national economic performance may be a poor measure of whether people on a local scale are, or will be, able to eat or not (Lee, 2013). There are many examples of countries, such as Kenya and Ethiopia, who have been able to produce enough food per capita to eradicate hunger yet who have suffered severe shortages on a local level (Scott, 1998). Therefore food sovereignty and local scale food security may be terms more aligned with the wellbeing of rural populations than national scale food security measures (Altieri et al., 2012).

The level of freedom afforded to people to farm as they wish may have considerable influence on the ability of the population to find adequate food (Sen, 1987). The Land Policy enacted demands a cultural shift which lacks support and relies on coercion for its implementation. Crop specialisation represents a considerable change from traditional practices, applying a technical solution to the environmental and climatic constraints which smallholders have adapted. In doing so it impinges greatly on the freedom of farmers to manage their land as they would otherwise choose. Farmers in rural Rwanda are aware of the suitability of their soils for different crops (Steiner, 1998) and particularly in areas of high elevation with very sloping land, mixed farming systems utilising biomass and agroforestry techniques are likely to be the optimal method of food production (Roose and Ndayizigiye, 1997). Indeed strategies of holding fragmented plots and growing diverse crops, may prove to use land more productively and perform a greater range of important ecosystem services than intensive agriculture (Ansoms et al., 2008) and also make use of the area's ample labour supply (Cantore, 2011). The policy also appears not to utilise the country's economic advantage, being the vast labour supply (Dercon, 2009) as cultivating, planting and weeding times for the few approved crop types is much more concentrated than the system of polyculture had developed to accommodate.

Although national scale indicators would suggest advancement, reduced poverty and development over the past fifteen years, the circumstances faced by many respondents bear striking similarities to rural studies conducted in Rwanda's past. Andre and Platteau (1998, 27) conducted fieldwork in the northwest of Rwanda in the early 1990s and highlighted similarly rapid change:

"First, there is rising inequality of land endowments and, more worryingly, increasing incidence of absolute poverty resulting from quasi-landlessness coupled with absence of regular off-farm incomes. As a matter of fact, access to regular off-farm income opportunities tend to accentuate rather than mitigate inequalities in land endowments …… where many land parcels are sold under distress conditions and purchased by people with regular non-agricultural incomes. Therefore, rather than a process of "involution" what we find at work in N are dispossession mechanisms driving vulnerable sections of the population (people deprived of access to regular off-farm incomes) below the subsistence margin. Second, the aforementioned disequalizing processes occur at such a breakneck pace that change is clearly perceptible even within a short time interval of only five years."

Government policy aims to increase productivity of land on a national scale (WFP, 2009). In Rwanda, the application of centrally designed models has had positive results in sectors such as health and education. However, applying such a style of policy to agriculture, so vital to the wellbeing of the majority of the population and so influenced by local culture and ecology, may not find either support or the desired outcomes (Huggins, 2009). The wellbeing of rural populations could be better addressed or supported through novel solutions seeking to increase the access of poor households to land, through land sharing, informal tenure and promotion of specifically pro-poor cooperatives. Both crop specialisation and the villagisation policy were very much in their early stages during the fieldwork for this study. Their impacts can be expected to increase in the coming years and their effectiveness should not be judged by figures for national production of maize or wheat but with more detailed impact assessment. The policies described in this thesis, implemented in Rwanda, bear striking similarity to the themes described by Scott (1998) in his book 'Seeing Like a State'. Scott states that many examples of failed experiments of social engineering have occurred under conditions with authoritarian states, very limited civil

society, centralised pervasive policies and, additionally a high-modernist ideology which involves a strong faith in technical or scientific solutions. This similarity has not evaded the notice of scholars of Rwandan history and politics (Newbury, 2011).

6.4 Methodological contribution

Approaches incorporating anthropological rigour to reveal local perspectives at the same time as providing generalisable insights into poverty dynamics and livelihoods have a valuable contribution to make in development. This study has not piloted new methods. Instead the concepts and framework already developed through the Wellbeing in Developing Countries (WDC) Research Group at the University of Bath, UK (Gough and McGregor, 2007) were applied to fieldwork. The application of WDC methods to natural resource management, agricultural policy and to the study of cultural identity and power provided a number of insights relevant to development. This study sought to apply the multidimensional wellbeing approach to areas of research or policy sectors and within those fields to link the approach with some of the principal concepts or theories and therefore contributed to the advancement of the WDC approach.

6.4.1 Contribution of the WDC approach to development

There is increasing recognition of the need to improve development effectiveness in policy and monitoring (Vogel, 2012). Due to the bias in knowledge within institutions towards objective, scientific measures, there is uncertainty about other perspectives and policy makers may therefore be unaware that there are things of which they are unaware, i.e. that unintended policy consequences may arise (Funtowicz and Ravetz, 1993). Development has become more self-reflective as transparency and accountability have become both requirements and considerations (Stern et al., 2012, Hubbard, 2001). There is therefore a considerable opportunity for the application of methods seeking to interpret rural wellbeing beyond simple material aspects but to bridge the gap between more anthropological studies and the economic approaches favoured as evidence in mainstream development (Peters, 2009). Research seeking to interpret complex rural contexts is often overlooked in mainstream policy. Much anthropological research is considered inaccessible or difficult to reconcile with policy design processes. A number of anthropological studies seeking to look at the impacts of development take an ideological stance in

criticising the exertion of power over subjects, paternalistic approaches or the dominant discourse conveyed, through which critical conclusions are inevitable (de Sardan, 2005b). Research applied to the problems inherent in development may more constructively and more challengingly seek to present counter-narratives through detail about the characteristics, perspectives and interactions which are overlooked by the assumptions which characterise mainstream development approaches (Roe, 1999).

Due to the focus of wellbeing research on subjective feelings, the perspective of the research participant is inherent in the WDC framework. This critical factor makes wellbeing research much more difficult to professionalise for the development sector than approaches such as the sustainable livelihoods framework, as described in the methodology, and this study has not made particular contributions in adapting methods to be more accessible to development professionals. However, this is a key challenge for future work and particularly in encouraging the use of rigorous mixed methods in assessing the impact of development interventions (White, 2009).

It is important to understand local perspectives about wellbeing to be able to adapt research utilising the WDC approach to the relevant context. In focus group discussions in each of the eight villages, consistent themes emerged and these have been discussed in more detail in sections 4 and 5 of this thesis. Some were quite expected and shared similarities to more objective measures of poverty such as the multidimensional poverty index (Alkire and Santos, 2010). Land and livestock, which were considered a key constituent of wellbeing, tend to be overlooked in standard indicators, being indirectly linked to income or to health indicators such as malnutrition. However it is unsurprising that land and livestock should be so prioritised in rural areas in Rwanda as both land scarcity and the need to improve soil with organic matter such as manure is well detailed (Rutunga et al., 2007).

More unexpectedly, especially compared to objective indicators which strongly prioritise it, education was not put forward as an essential element of wellbeing. Education was important to rural Rwandans, it frequently formed an aspiration for children in the face of greater competition for work, and was considered a priority among wealthier respondents, particularly in areas more closely linked to urban areas. However, there was an alternative perspective:

Village H, focus group discussion: *"Education doesn't have any importance. That (boy from the village) who finished secondary school, he goes to look after crops at night and carries charcoal in the day. He is just like us! Why did he go to study anyway?"*

While this may be surprising, the data from the 165 households revealed that very few have more than a few years of schooling, the average being 3.4 years. 39% of household heads had no education and 84% did not finish primary school. Land use and farming in Rwanda are, at least currently, driven more by experience than by education (Cantore, 2011).

Non-material elements of wellbeing consistently considered to be important in leading a good quality of life were good social relations and sharing locally and also freedom to be able to pursue goals as a person wished. The importance of such non-material and subjective issues in wellbeing implies the need for discursive, qualitative methods in exploring locally-relevant elements of wellbeing.

6.4.2 Contribution of this study to advancement of wellbeing research

The specific methods used to apply the WDC framework for this study consisted of household level research and mixed methods incorporating both quantitative and qualitative data. Actual methods to be applied to the study of wellbeing are not specified in previous wellbeing studies and, due to the multidisciplinarity of such a holistic framework, may vary depending upon context and research objectives (Bevan, 2007). However, of the relatively few wellbeing studies conducted, a large proportion have focused on producing quantitative, indicators through questionnaires and in making comparisons between sites or countries (McGregor et al., 2009, Copestake, 2011). The methods used in this thesis sought to maintain a balance between anthropological research and research providing generalizable results supported by quantitative data. Therefore although a relatively large sample size was selected (165 households) the focus of the methods was on qualitative research, using discursive, unstructured methods. And although a small number of consistent, measurable variables were collected from each household, use of simple questionnaires, checklists, rapid appraisals, rankings and reduction of multifaceted concepts to bottom-line or comparable indicators was avoided. In maintaining a focus on qualitative research investigating local perspectives, attention was paid to the researcher's position, influence of respondents' perceptions of the

researcher and motives for his research as well as the interaction between researcher and respondent. These aspects of the research are detailed in the introduction.

Power relations and their effects on wellbeing play a significant role in wellbeing research. However specific concepts to use for the study of social difference and relative power and are not explicitly detailed. In this study wellbeing was successfully linked to concepts of power and habitus, which appeared similarly multidimensional and epistemologically compatible. In contrast, as detailed in section 3, narrower concepts of power may have been less suitable for combined study. This extension of wellbeing to detail more explicitly potential concepts to address or mobilise subjective and relational dimensions may provide a means to enrich and expand the application of wellbeing research in the future.

The combination of wellbeing and ecosystem services aimed to provide a practical application of the latter concept. Ecosystem services have been promoted as a means to characterise the links between social and ecological systems. However, for their practical application there are few guidelines, beyond the simple theoretical diagram put forward by the MEA (2005). In the 300 page document "Ecosystems and Human Wellbeing" Ash et al. (2010) provide little more guidance than suggesting that assessments of ecosystem services should "*sketch out a causal pathway linking the service in question to the elements of human well-being it is thought to influence.*" Therefore the actual methods by which the multiple links to wellbeing should be sketched, described or, perhaps more usefully, explored are lacking and this limitation has greatly hindered the insights that have emerged and the ability for it to be integrated into practice.

The concept of ecosystem services is not itself unsuitable for this task. However ecosystem services can be seen as quite incomplete in promoting these wider social and ecological objectives on their own. They do not encompass the social complexity required to understand the position of the individual, household or community which uses or values that place, resource or habitat or to illustrate needs and drivers of behaviour (Norgaard, 2010). But ecosystem services are quite compatible with the WDC definition of wellbeing, as shown through the case study in section 4. Both ecosystem services and wellbeing concepts enable an analysis of changes taking place at the household level. Both also provide opportunities to understand non-monetary values and the influence of

cultural identities and practices. Yet bizarrely, and it is worth repeating, that holistic empirical studies of these links, although beginning to emerge (Coulthard et al., 2011), have been extremely rare (Carpenter et al., 2009). With little guidance on how to apply ecosystem services to the study of human wellbeing, the relationship has predictably been simplified and is now extensively reduced for policy purposes, to quite familiar and quite economic terms. The monetary valuation of ecosystem services and even the establishment of markets for them has therefore emerged as the major method for the application of the concept (Gómez-Baggethun et al., 2010), when ethically, the obscuring of people's values and inequality of distribution of ecosystem services which occurs through such valuation techniques should be avoided (Jax et al., 2013).

The use of a framework for the integration of wellbeing and ecosystem services enables the study of complex and multiple links between social and ecological systems, and dynamics between them. The approach to complexity of relationships between social and ecological systems contained within that framework shares much in common with social-ecological systems, complex adaptive systems research (Berkes et al., 2002, Folke, 2006), the study of dynamic sustainability (Leach et al., 2010) or social ecology (Lejano and Stokols, 2013). However the foundations of those approaches are more grounded in environmental science and pay greater attention conceptually to the potentially normative goals of sustainability and resilience than to social interactions and outcomes. The wellbeing definition adopted in this thesis offers a potential way to integrate in depth social research with social-ecological systems approaches. The perspectives of rural populations in developing countries are often lacking in approaches aiming to link ecosystems with social systems (Reyers et al., 2011).

Frameworks with similar aims are beginning to emerge, particularly through the UK Department for International Development and Natural Environment Research Council's Ecosystem Services for Poverty Alleviation Programme, yet other initial attempts to make the concept practicable have fallen short of providing the necessary detail (Smith et al., 2013, Balmford et al., 2010, Reyers et al., 2011). It is important, despite the preference for neoclassical environmental valuation techniques among policy makers, to use discursive methods allowing sufficient space for the different types and philosophical basis for valuation to be expressed beyond monetary terms

(Soderholm, 2001, Wegner and Pascual, 2011), which, as the paper reveals, a wellbeing framework and methodology facilitates.

6.5 Implications for theory

In this section the contribution of the findings to theoretical debates is addressed.

6.5.1 Revealing processes behind empowerment and marginalisation

The application of multidimensional wellbeing to social difference, and relative power between groups has relevance to concepts addressing social change such as marginalisation or empowerment. In section 3 terms such as agency and dispositions were applied and their specific impacts were discussed. Empowerment merely relates to an increase in agency (Ibrahim and Alkire, 2007) and marginalisation to a group with low relative power or reduced collective agency (Cleaver and Elson, 1995). Whereas these terms and others, such as social capital or participation are frequently used or misused with varied meaning or simply as binomial variables (Fine, 2010, Cornwall and Brock, 2005), the detailed approach offered by the assessment of wellbeing may provide detail into the processes which lead to 'empowerment' or 'marginalisation'. The relative societal position of individuals, groups and effects of change on their agency and cultural practices has widespread relevance to development contexts.

6.5.2 The relationship between poverty and ecosystem degradation

Section 4 considered the relationship between ecosystem services and human wellbeing and addressed the role that poverty may play in natural resource use or dependence. Many studies and practical conservation projects have assumed that much degradation of natural resources is caused by poverty among rural populations (Barbier, 2010). It is quite logical that people are more likely to be dependent on specific natural resources where rural poverty persists (Barrett and Swallow, 2006). However it cannot be assumed that ecosystem degradation is caused by poverty, even if poor people are present (Angelsen and Kaimowitz, 2001). The paper revealed that poverty does influence the use of natural resources in rural Rwanda, but it is far from alone in explaining natural resource use. Furthermore the basic needs which poor households met through natural resources were not causes of forest degradation. Firewood, building materials and food were not sought from tropical forests but

alternative habitats. The rapid deforestation of Gishwati had occurred primarily due to political decisions to degazette the area for military land, grazing schemes or resettlement of refugees rather than the actions of people living in poverty (Plumptre et al., 2001).

6.5.3 Implications for theories of agrarian change

Section 5 compared the insights from a rural wellbeing assessment to theories of agrarian change, particularly the relationship between agricultural technology and population growth. This comparison was especially relevant due to the illustrated importance of Malthusian and Boserupian theories of agrarian change in framing and designing agricultural policy in Rwanda. While Malthus (1888) considered that exponential population growth could lead to a poverty trap as food production per capita falls, Boserup (1965) saw that the reduction in available resources per person may induce innovation and result in step changes in food production to avoid such decline. The relevance of these theories to modern social processes has been questioned due to heterogeneity in the landscape, varied forms of land tenure and the gradual nature of social change but Malthusian and Boserupian theories continue to play a part in political processes (Marsden, 2006). Individuals do adapt their livelihoods to environmental change, though this may be constrained by social and cultural factors (Coulthard, 2008), or may be led by local institutions rather than individuals (Ruttan and Hayami, 1984). However the major influence on behaviour in rural Rwanda appeared to be the imposition of change by powerful national and international institutions. The dominant types of knowledge in those institutions guided or controlled the process of agrarian change rather than smallholders themselves acting independently. The use of simplistic theories about the productivity of land and its ability to feed an aggregate population overlooks the important political questions of who owns and manages land and who benefits from its production. The application of household level research to understanding agrarian change offers much more detail about the social processes at work and their interactions with poverty, hunger and inequality. In viewing this system as complex and subject to dynamic and interrelated cultural, social, political, environmental and economic processes, which all combine to influence agricultural practice and wellbeing, the approach taken shares much in common with complexity theory (Cilliers, 2002). The changes in patterns of labour, trade and in

social interactions which result from these multiple processes, and particularly the political influences described, could effectively be mapped by network analysis, participatory mapping or more detailed ethnography through further research. Such work could play an important role in effectively detailing policy impacts.

6.6 Limitations to this study and its results

In undertaking mixed methods research, a balance must be found between sample sizes allowing for quantitative analysis, generalizability of results and the depth of understanding required to understand social processes affecting individual respondents. The research for this study was conducted over the eight months from October 2011 to May 2012, though preparation was made in a prior trip in 2010. In this study the sample size was not predetermined and if more preparation had been required to establish a trust between researcher and participants, the sample size could have been substantially reduced. But although attention was paid to preparation and mutual understanding prior to conducting household interviews, the data for this study was collected through single visits to households, sometimes lasting only two hours. This represents a very short data collection period when considered in terms of detailed ethnographic study. There are therefore limits to the understanding of household wellbeing in all its complexity which is contained within the data this study presents. More detailed forms of household level study include life histories, which may require multiple visits with multiple members of a household (Davis, 2008). The single visit to households may have limited the amount of data collected regarding illegal activities such as mining in forest areas, though data on such activities may be best explored through key informant interviews and participant observation rather than household interviews.

The majority of interviews were open conversations, through which the respondent spoke in detail about their life and that of their family. However, among the 165 interviews there were also instances where the participant was either uncomfortable or disinterested. They formed a small number of cases and were particularly centred on one village, the wealthiest in the sample. In this village, several participants were unwilling to disclose all of their livelihood activities and appeared concerned about the potential for data to be used for tax purposes and of the potential consequences of voicing negative opinions about the government. In these few cases the

flow of conversation and level of trust were compromised. One such participant also took part in a focus group and stated clearly at the beginning of the focus group in village A, "*I will only discuss positive changes that have happened here.*"

There were topics of conversation I was not allowed to directly address. These had been outlined to me when I presented a guide of topics which interviews may address to the permit issuing authority, the Rwandan Development Board. Issues of security and ethnicity were not to be included in questions. Actually asking about those topics directly may have caused discomfort among participants and people did address those issues without prompting. However, specific events during genocide were avoided for both ethical reasons and due to potential risk for myself and my research assistant. On a small number of occasions, respondents began to describe events and that line of conversation was ceased.

Interviews were conducted in Kinyarwandan and, because my own ability to understand Kinyarwandan was developing yet limited, answers were interpreted into English on the spot, through a translator, my Rwandan research assistant. I had been wary of how this would affect the flow of conversation, but this was not an impediment. On many occasions it allowed for time for the participant to think and to elaborate or to correct answers. Through my own knowledge of the language I was most often able to understand the broad meaning of an answer and exact meanings and phrases were provided by the Rwandan assistant.

My own experience and understanding is likely to have influenced the questions asked, the direction of the conversation and the types of answers provided by participants. Religion was a topic rarely covered, except among the most religious of families where prayers marked the beginning and end of the visit to the home. Issues of gender inequality came to the fore through polygamous relationships, recorded in 10% of households and in two further instances where conflict within households was particularly acute. However gender issues appeared to play a considerably lesser role in determining wellbeing outcomes than did ethnicity and it is recognised that this may in part be due to the focus on the household as a unit of study rather than considering individuals.

In looking back at a period of ten to fifteen years previously there are difficulties in assessing the accuracy of recall. The use of mixed methods in supporting qualitative data about the nature of change with quantitative measures of change may address this to an extent, but recalling past events would be no replacement for a longitudinal study, unfortunately outside of the scope of doctoral research.

The study of different ways of understanding rural dynamics necessitates local-level research (Geertz, 1973). However, in focusing on the local scale, there is a risk of paying insufficient regard to wider processes affecting local social systems. Studies addressing local dynamics in environmental scarcity in Rwanda and attributing conflict to resource scarcity (Percival and Homer-Dixon, 1996) have been criticised for drawing conclusions which failed to address the wider economic and political causes (Peluso and Watts, 2001). In this thesis, I have tried to incorporate some of the wider political and economic drivers of change at national and global levels, however this study may underemphasize some of the wider processes impacting local level wellbeing.

In the course of this thesis, numerous issues which were important in the wellbeing of only specific individuals or a small number of households have been paid little attention as I have sought to concentrate on particular patterns relevant to the fields covered in each of the papers. But where such a high proportion of the population struggles daily to feed itself, to find fuel or sleep at night in a single room, with a large family, often exposed to the frequent rains, additional burdens of poor health or negative relations may have an extreme impact. Conflict between households affected 2% of respondents. A variety of health issues impacted the lives of 25% of households, with 2% suffering from Aids. Corruption had impacted 14% households. Some received help from local authorities and homelessness was virtually unknown in these communities as several respondents who may have been homeless were matched up with the landlord of an unused home. While many of these issues were not explored in detail in the thesis, they have interrelated and cumulative effects on the difficulties faced by poor households in achieving a desirable quality of life. The individuality of wellbeing, of the stories behind people’s lives and the differential situations faced by respondents therefore requires contemplation in conjunction with the major themes discussed throughout this study.

The results from this study may not be representative of the wider population in rural Rwanda. The three sites were all adjacent to tropical forest areas, which many regions in Rwanda are not. The ethnic mixes in the study areas were not representative of the country as a whole, with Twa greatly over-represented in this study. Levels of wellbeing, assets held or basic needs unmet may not be easily scaled up for the entire rural Rwandan population. However many of the issues presented through each analysis are influenced by national policies and national environmental and social trends and shocks. The gradient of remoteness and levels of infrastructure between study sites through which these changes have been interpreted provide an understanding of how similar issues may be affecting rural communities across Rwanda and even beyond where similar development policies or changes occur.

6.7 Concluding summation

Many of the development policies implemented in Rwanda have been lauded as successes, for their contributions to reductions in national level poverty indictors and for their contribution to the national economy (IMF, 2011). Yet the findings presented in this thesis, supported by both quantitative and qualitative data, reveal that while a minority of people have benefitted from those policies, the majority of people incur costs and suffer consequences as a result. The trajectories of many households in this study were quite contrasting with proclamations of development success and their own conceptions of wellbeing far removed from the indicators assumed by policy makers.

In effect, the rationality of policy making and the 'sound' or 'hard' science which it relies upon as evidence essentially overlooks the tasks required to achieve sustainable improvements in people's lives (Funtowicz and Ravetz, 1994). Results from this study suggest that theories and approaches which embrace complexity and reduce aggregation and assumption should at least be considered alongside broader scale models in development. Social theories capable of exploring social difference, cultural practice and processes of change have existed for many decades, yet while frequently used as research tools, their impact on mainstream policy processes has been very limited. A 'post-normal science' (Funtowicz and Ravetz, 2003) has not prevailed. However the need for a greater understanding of the

complexities of the wellbeing of intended development recipients is greater than ever due to the rapidity of change occurring in developing countries (Smith and Stirling, 2010). Increasing ethical concerns regarding policy impact in the field of development (Stern et al., 2012) may provide opportunities for such approaches to have greater impact, going beyond the sustainable livelihoods framework which received strong focus in the late 1990s.

Policy priorities may change in the future. Rather than prioritising capital investment and economic growth as the key mechanisms by which poverty can be alleviated, policy framings may advance to recognise the needs of rural inhabitants, to attempt to meet those needs and to assess whether attempts to do so have fallen short of their objectives, have caused unexpected or expected consequences and to react and adapt to improve in the future (Rowland, 2001, Singh, 2011). In the absence of such change, recognising the potential impact of policies and learning from experience may be a crucial factor in preventing repetition of policies documented to have caused harm. That cycle, particularly evident in sub-Saharan Africa must be broken for the potential benefits of development to be realised. There are numerous examples of successful development and those successes are commonly inclusive of local views to avoid value-laden approaches and are also adaptive to prevent negative impacts (Tendler, 1997, Van Donge et al., 2012). For these radical changes to happen, social theory and methods with which to apply it may have to become much more standardised and accessible to the development profession. The application of methodologies such as the multidimensional wellbeing approach utilised here to interpret complex rural contexts and local perspectives may reveal counternarratives, expose flaws in commonly held assumptions, myths and generalisations. Continued development and practical application of such research approaches to different sectors and fields of research may therefore contribute to changes in the way development operates in the future.

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